

TECHNOLOGY

REVIEW *December* 1957

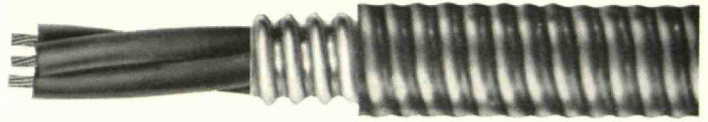


technology review

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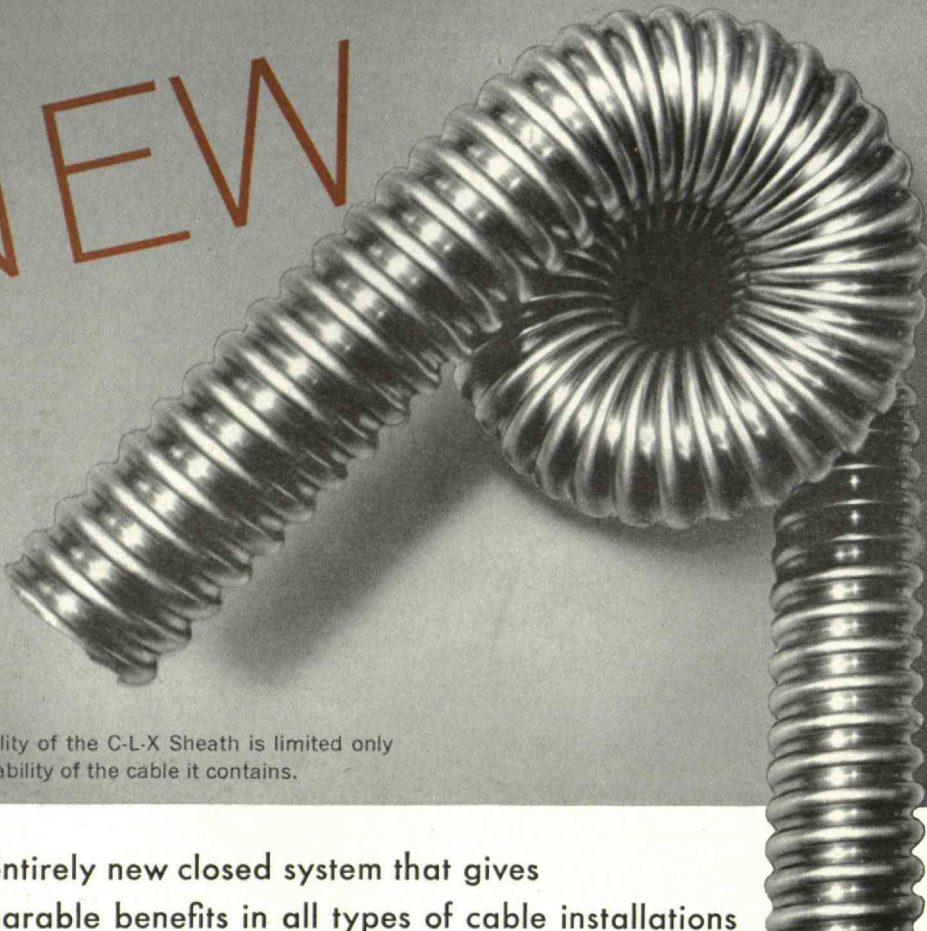
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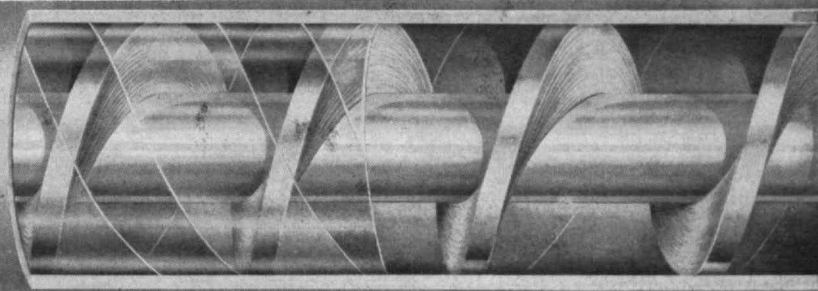
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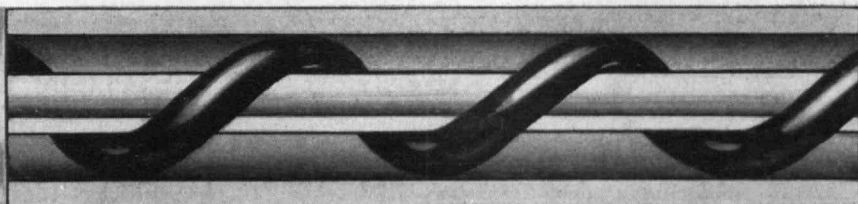
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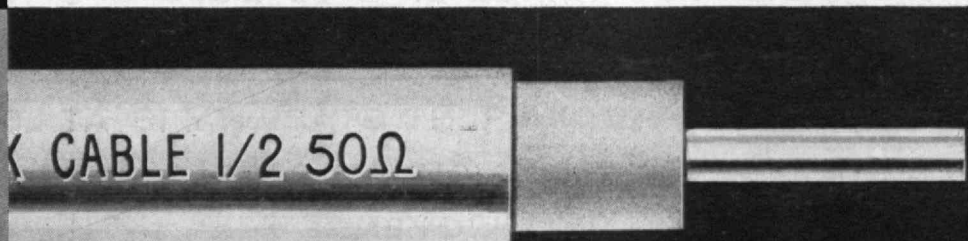
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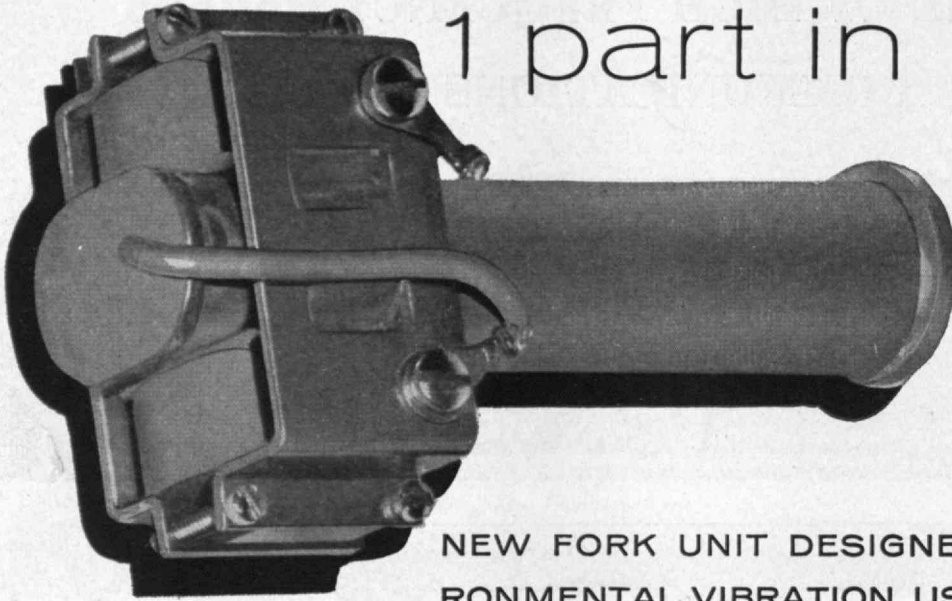


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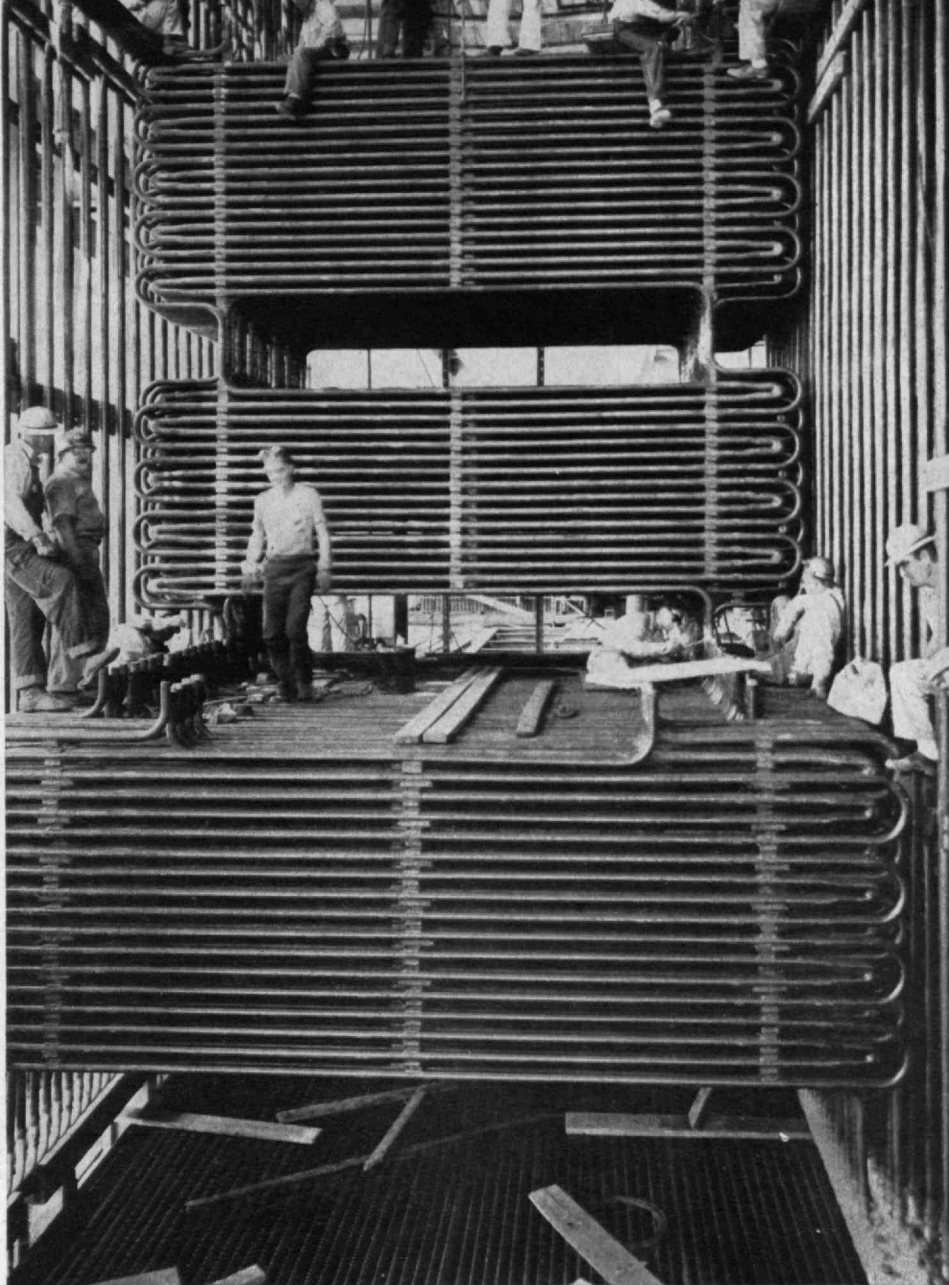
In the good old days, it was a simple matter to boil water and make steam. The large utility boilers of half a century ago would fit in many a modern living room . . . top steam pressures were about 200 pounds per square inch . . . and temperatures not much above the boiling point in a tea kettle.

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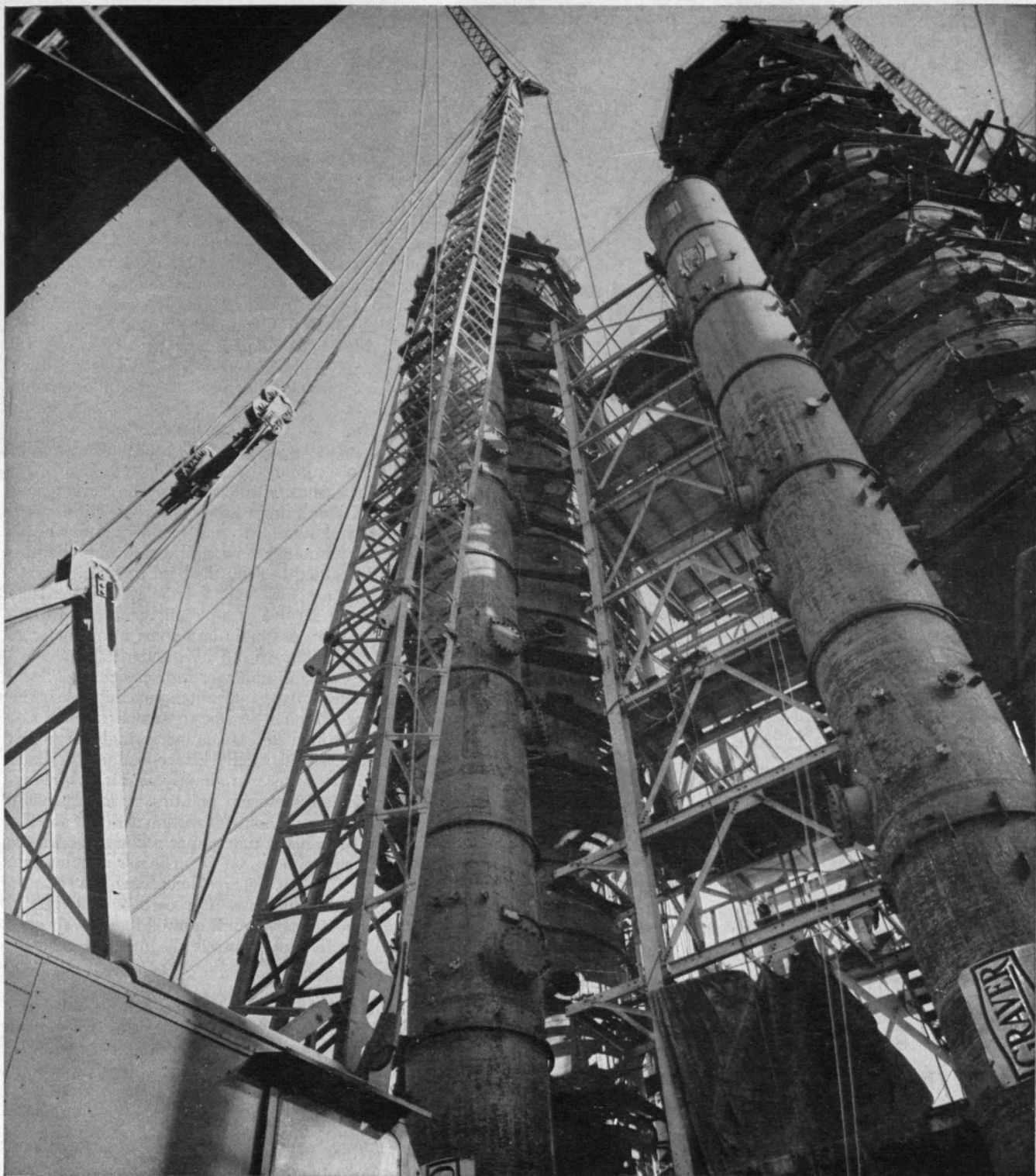
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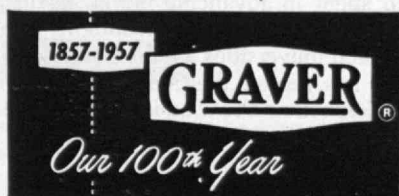
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THE TABULAR VIEW

M.I.T.'s Founder. — Last spring, the College of William and Mary held impressive ceremonies in celebration of the 75th anniversary of the death of an illustrious alumnus. Taking part in these ceremonies, at which he received an honorary D.Sc. degree, was JAMES R. KILLIAN, JR., '26, the 10th President of the school founded by William Barton Rogers in 1861. President Killian's able dissertation on the life of the founder of M.I.T. appears on page 105 of this issue. It sheds additional light on the life of the William and Mary alumnus whose long-cherished hope to found a new type of school (in which pure and applied science were fused and their cultural and utilitarian values used to the fullest) found fruition in Boston. That President Rogers' concepts on education are fully adapted to the needs of our Twentieth Century society are evident to all who have followed President Killian's administration of "Boston Tech." For nearly a third of a century, the pages of The Review have reflected Dr. Killian's impressive work as author, editor, educator, and administrator. His biography needs no recital here, although new and significant chapters will certainly be added to it. In the light of recent events, prophetic indeed are Dr. Killian's remarks (page 128) that, "If we are to survive as a nation, science most certainly will play an increasingly large part in our national life." With his appointment on November 7, as Special Assistant to President Eisenhower for Science and Technology, Dr. Killian embarks on a new and highly significant mission for national service in which science and technology are destined "to play an increasingly large part in our national life." Naturally his colleagues, in Cambridge as well as elsewhere, are happy at this new recognition of Dr. Killian's unusual abilities. It is gratifying, too, to learn that — without exception so far as The Review knows — the many newspaper accounts and radio and television commentaries on Dr. Killian's appointment have hailed his selection by President Eisenhower as an ideal man for a difficult post. As recorded on pages 96 and 97 of this issue, Dr. Killian is now on leave of absence from M.I.T. The Institute's loss is the nation's gain.

Man's Achievement. — No stranger to Review readers is JAMES A. TOBEY, '15, whose article in this issue (page 109) traces the antiquity of disease throughout recorded history and even back to the time when huge, prehistoric reptiles roamed at will in the primeval ooze. Dr. Tobey takes comfort in the knowledge that, in the short span of about a century, man has found ways of using his mind to overcome most of the maladies from which he has suffered throughout the ages. Certainly there is hope that other maladies of man can be overcome likewise by developing and properly directing first-rate minds. After having attended the Roxbury Latin School, Dr. Tobey received the S.B. degree from M.I.T. in 1916, the LL.B. degree from Washington Law School in 1922, an M.S. degree from the American University in 1923, and the Dr.P.H. degree from M.I.T. in 1927. Dr. Tobey's professional life has been spent in advancing public health and in improving state and national laws affecting it. Dr. Tobey has lectured at such universities as Yale, Harvard, Columbia, and M.I.T., has served the Army's Medical Service in the role of Colonel, and is a lucid and prolific writer on topics dealing with public health. Dr. Tobey

(Concluded on page 92)



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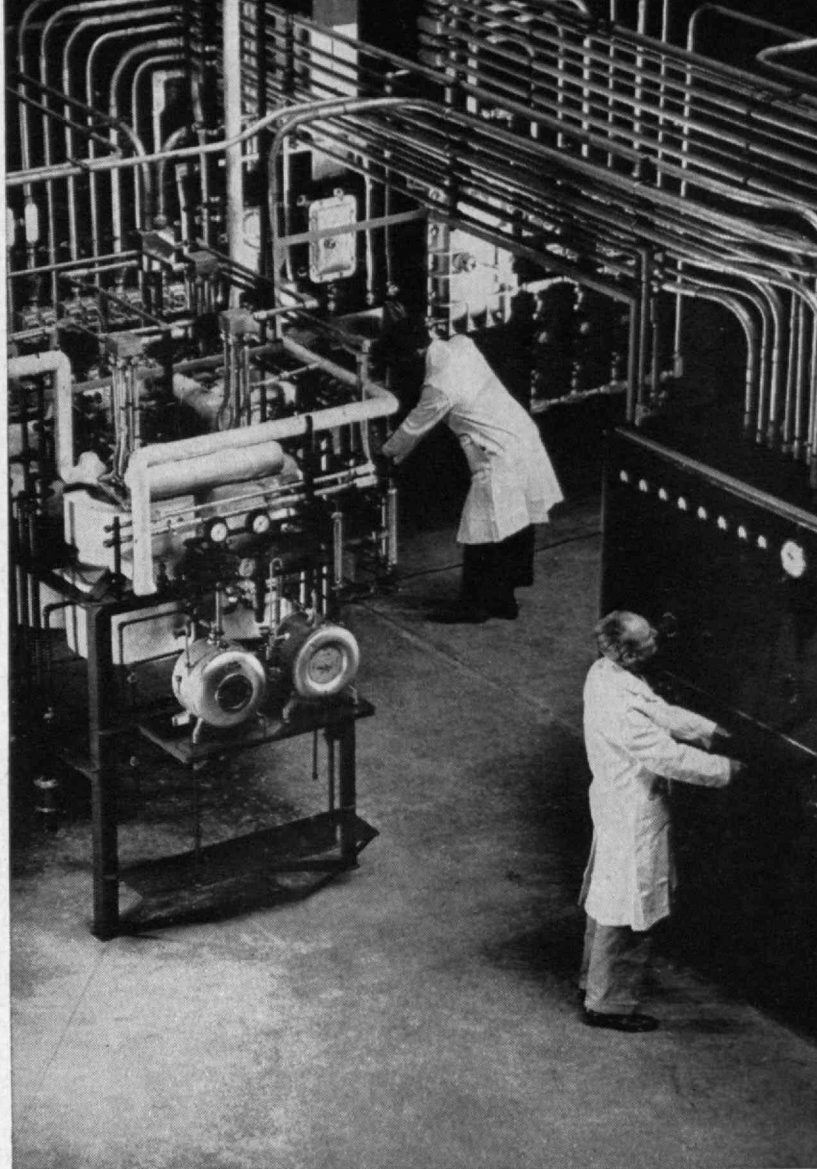
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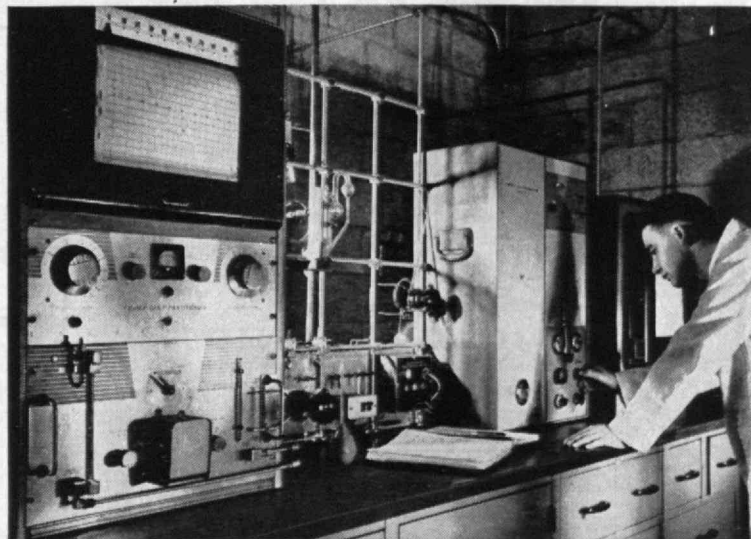
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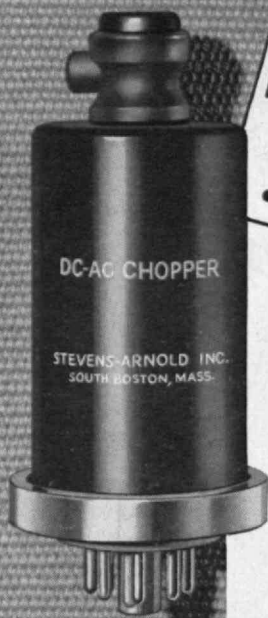
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MOST PILOT UNITS—at The Center are put together from standard "building blocks." Skid-mounted charging units such as the one at left hold tanks, heaters and pumps for transfer and metering. Process equipment, here shown in background center, can be widely varied. At right is electrical control cabinet. All switches, relays and controls not housed in explosion-proof boxes are enclosed in cabinets like this one, pressurized with outside air to exclude process vapors.



ANALYSIS OF MATERIALS processed and produced in pilot operations at The Center is an important part of the work carried out by Lummus engineers. Here a laboratory technician determines the composition of a multiple-component gas, using a gas chromatography technique.



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THE TABULAR VIEW

(Concluded from page 90)

is author of *Public Health Law*. He also has been associate editor of the *American Journal of Public Health*, has written about 20 pamphlets and more than 100 articles. Connecticut and Florida both claim him as resident.

Society's Problem.—After advancing the argument that it is society at large who shouts loudest to benefit from technology, LAWRENCE R. HAFSTAD deplores the fact (page 111) that the mass of our population remains ignorant of the foundations on which their technological society is based. Dr. Hafstad holds that a major and urgent problem of our society is to revise and stiffen our educational system, for "progress cannot be made without struggle, nor freedom enjoyed without personal responsibility." He emphasizes, especially, the need for mature, responsible citizens to have a good background in those subjects—primarily mathematics, physics, and chemistry—on which a technological society depends. Dr. Hafstad received the B.S. degree in electrical engineering from the University of Minnesota in 1926, and the Ph.D. degree in physics from the Johns Hopkins University in 1933. From 1928 to 1946 Dr. Hafstad was on the staff of the Carnegie Institution of Washington. During World War II he was assigned to the staff of the Applied Physics Laboratory of Johns Hopkins at Silver Spring, Md. In 1947 he became executive secretary of the Research and Development Board, Office of the Secretary of Defense. In addition, he served as professor of applied physics at Johns Hopkins from 1947 to 1954, and was director of the Johns Hopkins Institute for Co-operative Research from 1947 to 1949. Between 1949 and 1955 he was first director of the Reactor Development Division, Atomic Energy Commission, and from 1949 to 1951 carried a Presidential appointment as chairman of the Interdepartmental Committee on Scientific Research and Development. In January, 1955, he became director of the Atomic Energy Division of the Chase Manhattan Bank, and later that year became vice-president of General Motors Corporation, in charge of the Research Staff. Dr. Hafstad's article was delivered before a meeting of Sigma Xi, and is reprinted from *American Scientist*, Volume 45, Number 2, March, 1957.

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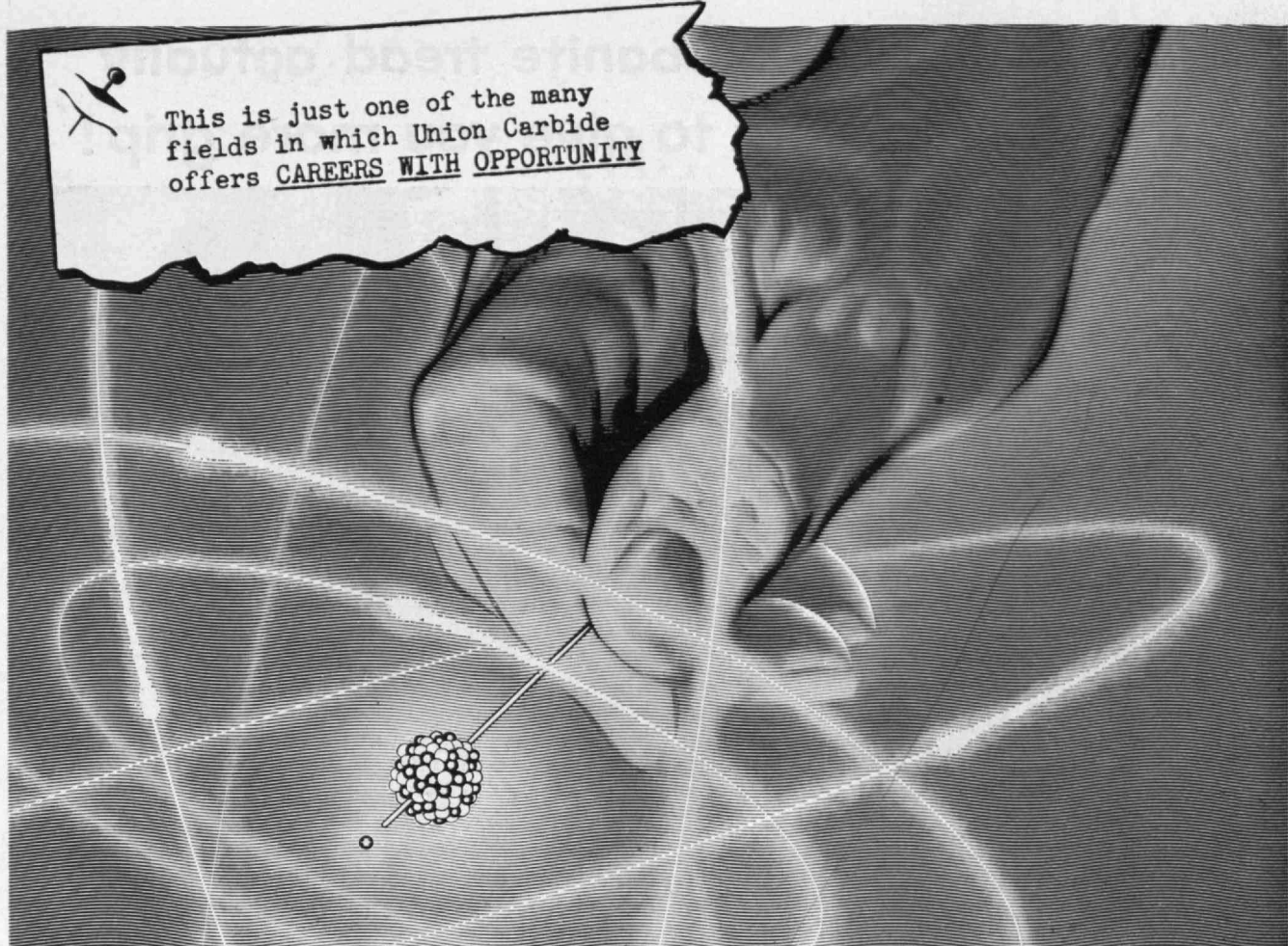
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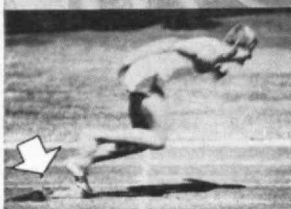
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THE TECHNOLOGY REVIEW

THE TECHNOLOGY REVIEW

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DR. KILLIAN AND THE PRESS

Front Cover

Photograph by Louis R. Nelson

M.I.T.'s President confers with members of the press following President Eisenhower's announcement of his Washington appointment

TWO MEN IN NEW POSTS

Frontispiece 96

President Killian takes on duties as Special Assistant to the President for Science and Technology, and names Chancellor Stratton the Acting President of M.I.T.

WILLIAM BARTON ROGERS

By James R. Killian, Jr., 105

The founder of M.I.T. fused pure and applied science, emphasized its utilitarian and cultural values, and used a humanistic and historical approach in his teachings

THE ANTIQUITY OF DISEASE By James A. Tobey 109

In the short space of a century, man has learned how to conquer most of the maladies which have afflicted him

SCIENCE, TECHNOLOGY, AND SOCIETY

By Lawrence R. Hafstad 111

The desire for progress is inconsistent with the trend toward effortless education, and the substitution of pastimes for disciplines

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Relating to the Massachusetts Institute of Technology

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M.I.T. Photo

"Standing room only" is available to hundreds as doors to Kresge Auditorium are closed half an hour before delivery of the first Karl Taylor Compton Lecture by Niels Bohr.



Fabian Bachrach

Named by President Eisenhower as Special Assistant to the President for Science and Technology in a nationwide radio and television address on November 7, President Killian speedily moved to Washington to take up his new duties of national service.

The administration of Dr. Killian, as 10th President of the Massachusetts Institute of Technology, has been marked by great expansion of M.I.T. and its educational facilities and services, increased responsibilities for defense research, and greater emphasis on the humanities and social sciences in the education of scientists and engineers.

Dr. Killian has long served the national government in a number of important advisory capacities. He is a member of the Science Advisory Committee, the Office of Defense Mobilization, and of the Board of Trustees of the Institute for Defense Analysis, Inc.—an organization set up by M.I.T. and four other universities for applying scientific methods and analysis to military problems. In 1955 he was appointed by President Eisenhower to be chairman of the Board of Consultants on Foreign Intelligence Activities, and for a five-year period he served as chairman of the Science Advisory Panel for the Department of the Army. He served as chairman of the Technological Capabilities Panel under direct appointment of President Eisenhower from 1953 to 1955. In 1951-1952, Dr. Killian was chairman of the Air University's Board of Visitors, and a member of the Board of Visitors of the United States Naval Academy from 1953 to 1955. He was also a member of the Committee for the White House Conference on Education in 1954 and 1956.



JULIUS A. STRATTON, '23 ▶

Since 1949, when he was appointed Provost, Dr. Stratton has been a principal administrative officer of M.I.T. He became Vice-president and a member of the M.I.T. Corporation in 1951, and was appointed Chancellor in 1956, becoming a member of the Corporation's Executive Committee at the same time. As Chancellor and Vice-president, Dr. Stratton was already in charge of the Institute's academic program and served as general executive officer for all Institute affairs when he was named, by President Killian, to the post of Acting President of M.I.T. while Dr. Killian is on leave for his important Washington assignment.

After studying at the University of Washington, M.I.T., University of Grenoble, University of Toulouse, and the Eidgenossische Technische Hochschule of Zurich, Dr. Stratton returned to the Institute, where he served as assistant professor in the Department of Electrical Engineering and later as a full professor in the Department of Physics. He, too, has had a broad background of scientific and administrative service to the nation. He was one of the first members of the staff of the Radiation Laboratory, established by M.I.T. in the summer of 1940, to develop radar systems. In 1942 he became Expert Consultant in the Office of the Secretary of War. During this period he organized a series of technical advisory committees to the Air Force on programs involving use of radar techniques. After World War II, he established the Research Laboratory of Electronics at M.I.T. and served as its first director until 1949 when he was appointed to the newly created post of Provost.



Fabian Bachrach



The Technology Review



VOL. 60, NO. 2 DECEMBER, 1957

The Trend of Affairs

Killian Named Special Assistant for Science and Technology

■ In his radio and television address before the nation on November 7, President Eisenhower announced that James R. Killian, Jr., '26, had been named Special Assistant to the President for Science and Technology. The announcement came during an address intended to allay public concern regarding the relative progress of the United States and the U.S.S.R. with respect to technical achievements for military purposes.

Response to President Eisenhower's selection of M.I.T.'s President to serve in the newly created post was unanimously favorable. Dr. Killian has had long experience in service on various important governmental agencies relating to national defense and education. The esteem with which President Killian is regarded was stated by President Eisenhower as follows: "He is a man who enjoys my confidence and the confidence of his colleagues in the scientific and engineering world, and in the Government." Dr. Killian's position as President of a world-renown technological educational institute, together with his unique personal qualifications for the new Washington assignment, has done much to enable President Eisenhower to recapture public confidence that the nation's scientific man power will be effectively utilized for national security.

Service for the nation's welfare is no innovation for the Institute's 10th President. During World War II, Dr. Killian was responsible for M.I.T. administration while the late President Karl T. Compton was frequently on leave of absence to serve national interests on important scientific assignments. Particularly since he became President of M.I.T. in 1949, Dr. Killian has also made important personal contributions to national policy on matters of education and science, as recorded on the opposite page.

Immediately after President Eisenhower's address, Dr. Killian announced, in a press conference, that Julius A. Stratton, '23, Chancellor of M.I.T. since 1956, had been appointed by the Corporation's Executive Committee to assume the duties of M.I.T. President during the period that Dr. Killian will be

on leave of absence in Washington. In making this announcement, Dr. Killian said:

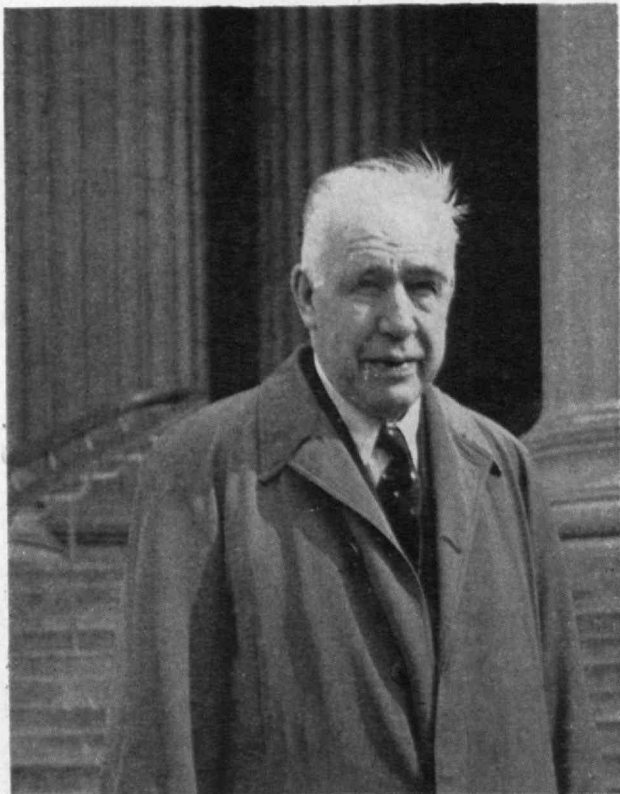
The availability of Chancellor Stratton to assume all the duties of the Institute's presidency during my absence has made it possible for me to accept President Eisenhower's invitation to come to Washington. Dr. Stratton and I have worked in closest rapport and partnership over a long period of time in the administration of the Institute and he is superbly qualified to execute all of the duties and responsibilities of its presidency. He will serve as the Chairman of the Executive Committee of the M.I.T. Corporation and perform all of the other functions of Chief Executive during my period of leave.

Of his own appointment, Dr. Killian remarked:

In behalf of the President I shall move as rapidly as possible to marshal the best scientific and engineering judgment and creative talent in the United States and to make it available to the President for the formulation of national policy which involves science and technology. The President has provided a means to integrate American science in every proper way with national policy-making, and I shall seek to facilitate this by every means at my disposal. A very strong scientific advisory group is an essential part of the plan, and the recruiting of this group will proceed with the utmost dispatch.

The President has clearly stated his strong convictions about the importance of science and scientific education to our national life and security and his desire that everything possible be done to encourage scientific research and education and to strengthen any deficiencies.

Dr. Killian and Dr. Stratton are both Technology Alumni and have served the Institute — except for leaves of absence in connection with national security — since their graduation from M.I.T. Both are superbly qualified for their current pressing assignments, and both have the wholehearted respect and enthusiastic support of their colleagues in science and education. Alumni, Faculty, staff, and students alike take pride in their accomplishments as President Eisenhower looks to M.I.T. for new leadership in science and technology. The Review extends to both of them every good wish in their new undertakings.



M.I.T. Photo

Niels Bohr . . . on steps of Rogers Building at M.I.T. on October 22 on his way to Washington where he received the Atoms for Peace Award and medal shown at lower right.

Bohr at M.I.T.

■ Niels Bohr, one of the world's greatest living scientists, gave six lectures at M.I.T. during November. The Danish physicist, who came to the United States late in October, received the \$75,000 Atoms for Peace Award in Washington on October 24, and spent the remainder of the month and most of November in Cambridge. He was the first guest of M.I.T. to give the Karl Taylor Compton Lectures, established in memory of the former president of the Institute.

Presentation of the first \$75,000 Atoms for Peace Award was made to Professor Bohr, 71-year old Danish scientist and dean of nuclear physics, during a special convocation at the National Academy of Sciences in Washington on October 24. President Eisenhower headed the distinguished body of government and United Nations officials, scientists, diplomats, and industrial leaders invited to attend the convocation.

The award presented to Professor Bohr is the first of 10 to be granted to those persons anywhere in the world who have made the greatest contributions to the peaceful uses of atomic energy. The Atoms for Peace Awards were created in 1955 as a memorial to Henry Ford and Edsel Ford. Funds are provided by the Ford Motor Company Fund which has authorized \$1,000,000 for the purpose.

The award to Professor Bohr was presented by President Killian who is chairman of the Board of Trustees of Atoms for Peace Awards. Professor Bohr was also presented with a sculptured gold medal, which was executed by Sidney B. Waugh, '27.

A brilliant student as a youth, Professor Bohr opened up a whole new era in atomic physics when, at the age of 28, he presented a basic theoretical work on the structure of the atom and contributed materially to the study of quantum physics.

The key address at the convocation in Washington was delivered by Arthur H. Compton, younger brother of the late President Compton in whose memory the Karl Taylor Compton Lectures were given by the Danish scientist.

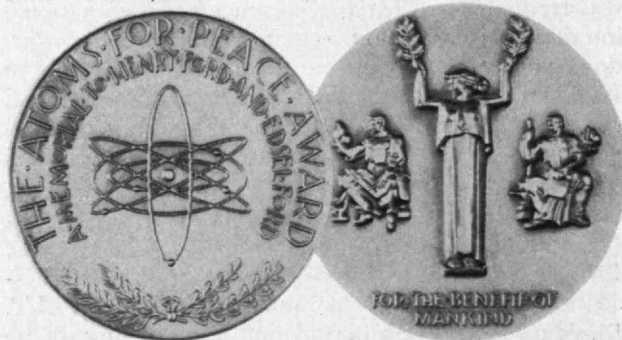
In his lectures at M.I.T., Dr. Bohr gave an elementary account of the development of quantum physics, in which he had a leading part and of which many of today's scientific achievements are the product. He also discussed philosophical implications of modern scientific thought. Seminars in which M.I.T. professors and students participated with him were also held during his stay in Cambridge.

The initial lecture on November 5, in which Professor Bohr reviewed the development of man's thinking about the universe from ancient times to the present, drew a tremendously large and unexpected crowd. Well before the start of the lecture at 8:00 P.M., Kresge Auditorium was filled to capacity, with an audience overflow in the aisles and on the stage. The Kresge lobby provided some accommodation for the many who came to hear Professor Bohr, as may be glimpsed from the print on page 95. Probably more than 1,000 people were turned away, among them numerous extremely disappointed Faculty members. Even Professor Bohr and J. A. Stratton, '23, M.I.T. Chancellor (who presided) had difficulty in entering Kresge!

Professor Bohr's second lecture on November 7 coincided on the hour with President Eisenhower's address to the nation. The large audience who listened to Professor Bohr that evening also heard, at the end of his lecture, a transcription recording of President Eisenhower's speech, in which he announced the appointment of M.I.T. President Killian as Special Adviser to the President for Science and Technology, as recorded on page 97 of this issue.

A native of Denmark, Dr. Bohr has spent most of his career at the University of Copenhagen, where he has been director since 1920 of the Institute for Theoretical Physics, a center which has attracted scientists from all over the world for study under him. When he was only 37 years old, in 1922, he received the Nobel Prize for Physics, in recognition of "his work in the study of the structure of atoms and of the radiation emanating from them."

Photo — Atoms for Peace Awards, Inc.



■ The current vitality and excellence of M.I.T.'s musical life is dramatically symbolized in four Unicorn recordings made at the Institute and released in mid-November. These long-playing records, bringing the total number of Unicorn-M.I.T. recordings to 10, include three organ records—"The Art of André Marchal," and "Beethoven Piano Sonatas," Op. 90 and Op. 101, performed by Ernst Levy, Professor of Music at M.I.T.

These records are the product of a combination that is becoming increasingly familiar at the Institute—a world-famous visiting artist working with M.I.T.'s own musicians and making use of recording facilities in Kresge Auditorium and the M.I.T. Chapel. In this case, the visiting artist is renowned André Marchal, organist at the Church of St. Eustache in Paris.

Institute musicians who contributed to the making of the records include students and members of the research staff and Faculty belonging to the M.I.T. Choral Society. When Mr. Marchal heard the Choral Society perform Bach's "St. John's Passion," he was so impressed that he requested their participation in his recordings. So the M.I.T. Choir was organized and sang Gregorian chants on two of Marchal's records. The choir is conducted by Professor Klaus Liepmann, Director of Music at M.I.T., and author of the program notes on the Marchal records.

Professor Levy—composer, pianist, and Faculty resident—has contributed more to music at the Institute than one could appreciate even from hearing his masterful recordings. Edward T. Canby has this to say of him: "Ernst Levy is a 'big' pianist and a Beethoven man through and through. . . . Put on his 'Appassionata' and you'll soon find out why he is what he is."

The excellent acoustics and unique design of the M.I.T. Chapel and Kresge Auditorium suit equally well the requirements of performers, listeners, recording engineers, and record owners. The Unicorn recordings are a breath-taking illustration of co-operation between a fine organ builder, acoustics experts (Messrs. Richard H. Bolt, Leo L. Beranek, and Robert B. Newman, '49, of M.I.T.), and a thoughtful architect, Eero Saarinen. The two Holtkamp organs were designed specifically for the Kresge Auditorium and the M.I.T. Chapel. Mr. Marchal takes advantage of the contrast between the large, versatile Kresge organ and the "small form" Chapel organ by playing appropriate sections of the Bach "Klavier-Ubung," Part III, on alternate instruments.

The three volumes of "The Art of André Marchal" are: Volume 1 (UNLP 1046) J. S. Bach, *Klavier-Ubung* (Part III); Volume 2 (UNLP 1047) Masters of French Organ Music; Volume 3 (UNLP 1048) J. S. Bach and His Predecessors.

Other long-playing records in the "Music at M.I.T. Series" include: "The Modern Age of Brass" by Roger Voisin and his Brass Ensemble; "Handel Organ Concertos" by Lawrence Moe and the Unicorn Concert Orchestra, conducted by Professor Liepmann; and recordings of piano sonatas by Haydn, Beethoven, and Liszt—all played by Professor Levy.

On the Horizon

December 7, 1957—11th M.I.T. Alumni Regional Conference, Pittsburgh, Pa. **Speakers:** Deans E. P. Brooks, '17, and George R. Harrison; Professors Jerrold R. Zacharias, Irwin W. Sizer, and Morris Cohen. (For further information, consult Thomas I. Stephenson, 3d, '45, Aluminum Company of America, Pittsburgh 19, Pa.)

February 4, 1958—Midwinter Meeting of Alumni Association, M.I.T. Campus in Cambridge.

March 1, 1958—12th M.I.T. Alumni Regional Conference, Washington, D.C. (For further information, consult T. K. Meloy, '17, 3000 Arlington Boulevard, Falls Church, Va.)

March 13-15, 1958—10th Annual Fiesta, M.I.T. Club of Mexico, Mexico City, D.F. (For reservations, consult Clarence M. Cornish, '24, Margaritas 139, Villa Obregon, Mexico 20, D.F., Mexico.)

June 16, 1958—24th Alumni Day, 1958, M.I.T. Campus in Cambridge.

Stuart Edgerly: 1903-1957

■ Stuart Edgerly, Assistant Professor of English and History in the Department of Humanities, died at the Institute on October 9. He was 53 years old.

A member of the Institute's Faculty since 1942, Professor Edgerly was born in Omaha, Neb., and received his A.B. at Dartmouth College and his A.M. at Harvard University. From 1930 to 1942, he served as instructor in English at Syracuse University, Suffolk University, and Northeastern University.

He was a member of the Modern Language Association of America and the American Association of University Professors.

Professor Edgerly, who lived in Sudbury, is survived by his wife, Florence, and by two sons—Stuart, Jr., '46, and William S. Edgerly, '49.

William A. Wilson: 1913-1957

■ William A. Wilson, Professor of Mechanical Engineering at M.I.T., died on November 2. He was 44 years old. A native of Richland Center, Wis., and a graduate of Columbia University, Professor Wilson joined the M.I.T. Faculty in 1949 as associate professor and was promoted to a full professorship in July of this year.

His 15 years' association with research and development in American industry began with a 1934 appointment as experimental engineer at Westinghouse Electric Corporation. During and after World War II, he was development engineer and mechanical division engineer in charge of gas turbine developments at the Elliott Company.

Professor Wilson is survived by his wife, the former Eleanor Lawson, and by four children—Carla L., Kathryn H., Grant M. and Douglas J. Wilson.



Metropolitan Photo

On this and the opposite page members of the Class of 1932 may be viewed as they celebrated their 25th reunion on the week end of June 7-9, culminating with Alumni Day activities on June 10. Most of the class reunion events were held on the M.I.T.

Individuals Noteworthy

■ Prominent in the autumn news have been the 32 alumni promotions, elections, or appointments enumerated below:

Irving W. Wilson, '11, as Chairman of the Board, Aluminum Company of America . . . *Leo I. Dana, '17*, as Vice-president of Research and Development, Linde Company Division, Union Carbide Corporation . . .

Philip B. Craighead, '18, as President, Magnesium Association . . . *Latimer F. Hickernell, '22*, as Vice-president of Engineering, Anaconda Wire and Cable Company . . .

Fred C. Koch, '22, as a Director, Northern Natural Gas Company . . . *Harland C. Forbes, '23*, and *C. Wesley Meytrott, '27*, respectively, as Chairman of the Board and Vice-president in Charge of Sales, Consolidated Edison Company of New York . . .

Edward J. Healy, '23, as Vice-president of Construction, Kuljian Corporation . . . *Avery H. Stanton, '25*, as Treasurer and Vice-president, Post Products, Inc., of Auburndale, Mass. . . .

Chester F. Buckley, '26, as President and General Manager, Standard Transformer Company . . . *Theodore A. Mangelsdorf, '26*, as a Senior Vice-president, Texas Company . . .

Charles H. Topping, '28, as President, Building Research Institute . . . *John J. Wilson, '29*, as a Director, Second Bank-State Street Trust Company, Boston . . .

Henry N. Bates, '30, as Vice-president, Johns-Manville Products Corporation . . . *Richard T. Kropf, '31*, as President, American Society for Testing Materials . . .

Gilbert M. Roddy, '31, as Executive Vice-president, Boston Manufacturers Mutual and Mutual Boiler and Machinery Insurance Companies . . . *Oscar T. Marzke, '32*, as Vice-president, United States Steel Corporation . . .

Lewis W. Moore, '33, as President, American Oil Company . . . *Newland F. Smith, Jr., '33*, as President, Gray Research and Development Company . . .

Robert H. Winters, '33, as President, Rio Tinto Mining Company of Canada, Ltd. . . . *Timothy J. Coleman, '34*, as Vice-president, Union Carbide Development Company . . .

Edmund Q. Sylvester, 2d, '34, as President, American Ship Building Company . . . *César A. Calderon, '36*, as a Director, Government Development Bank for Puerto Rico . . .

W. Gardner Barker, '37, as Executive Vice-president, Thomas J. Lipton, Inc. . . . *Paul A. Vogel, '37*, as Treasurer, Underwood Corporation . . .



Campus, with headquarters at Baker House. James R. Killian, Jr., '26, M.I.T. President, gave the welcoming address at the banquet on June 8, pictured above at the Faculty Club. Professor Rolf Eliassen was chairman of the Reunion Committee.

Willard F. Babcock, '39, as Director of Highways, State of North Carolina . . . Maxwell C. Coutts, '39, as President, Canadian Society of Industrial and Cost Accountants . . .

Julius P. Molnar, '40, as Vice-president, Bell Telephone Laboratories . . . David T. Morgenthauer, '40, as President, Foundry Services, Inc., of Columbus.

Samuel K. McCauley, '41, as President of Iricon Agency, Ltd., which represents nine American oil companies in the Iranian Oil Consortium . . .

Robert L. Purvin, '41, as Vice-president, Foster Grant Company of Leominster, Mass. . . . Albert F. Clear, Jr., '42, as Vice-president, John B. Stetson Company.

■ Special honors to Alumni include:

To James C. Kimberly, '94, an honorary doctorate of laws, by Lawrence College . . . to Alfred P. Sloan, Jr., '95, the Frank H. Lahey Memorial Award for his service as a layman to the cause of medical education, presented jointly by former President Hoover, the Presidents of the American Medical Association, and the Association of American Medical Colleges . . .

To Herbert J. Ball, '06, an honorary doctorate of science, by Lowell Technological Institute . . . to J. Newell Stephenson, '09, an honorary doctorate of science, by the University of Maine . . .

To William H. Martin, '11, an honorary doctorate of science, by Johns Hopkins University . . . to Robert E. Wilson, '16, a Distinguished Service Citation, by the Automotive Old Timers . . .

To Lewis W. Douglas, '17, an honorary Knight Grand Cross of the Order of the British Empire, by Queen Elizabeth II . . . to Thorndike Saville, '17, an honorary doctorate of science, by New York University . . . to Philip C. Rutledge, '33, an honorary doctorate of science, by Purdue University.

■ Among the Alumni to whom birthday congratulations are appropriate during this month are two who are due to celebrate their 90th anniversaries, 10 their 85th, and two their 80th, as listed below with their respective dates of birth:

December, 1867 — *Lucretia M. Churchill, '96, on the 8th; and Henry R. Hayden, '90, on the 16th.*

December, 1872 — *Edward A. Eames, '96, on the 5th; Arthur W. Tidd, '94 on the 9th; George W. Sherman '94, and John S. Eynon, '96, on the 10th; Victor Shaw, '96, on the 12th; Karl A. Pauly, '96, on the 18th; Luther Conant, '95, on the 21st; Lawrence W. Jenkins, '00, on the 23d; Arthur S. Rogers, '94, on the 29th; and John J. McSorley, '97, on the 30th.*

December, 1877 — *James G. Leiper, Jr., '99, on the 19th; and Salvador Madero, '00, on the 31st.*

Twenty-five Years Ago This Month . . .

■ Technology's annual fiscal report by Treasurer Everett Morss, '85, covering 1931-1932, showed that the Institute's net operating and expense figures had exceeded the three million mark for the first time and that, in a year of financial stress when many educational institutions incurred heavy deficits, the Institute expended but \$15,575 above its receipts.

Mr. Morss reported that on the previous June 30 the book values of the Institute's "land, buildings, and equipment" and its "endowment funds" were recorded, respectively, as being \$15,706,341 and \$32,651,408. Capital gifts, exclusive of those to establish the Technology Loan Fund, totaled \$1,582,355 during 1931-1932.

Since the \$500 tuition rate became effective for 1931-1932, income from students was \$1,589,668, an increase of 20 per cent compared with 1930-1931; but income from invested funds was \$1,238,346, a drop of nearly 5 per cent.

■ Registrar Joseph C. MacKinnon, '13, according to his annual census of the student body made November 1, found that the 1932-1933 registration totaled 2,831, a drop of 357 or 11 per cent, from 1931-1932. The entering Freshman Class of 1936 numbered 561, or 67 less than the entering Freshman Class of 1935. Included in the 561 of the Class of 1936 were about 100 who matriculated under the "new plan permit-

ting the entrance of a limited number . . . without examination, provided they have graduated in the upper fifth of their class in an accredited secondary school, and can enter with a clear record in all subjects required for admission."

■ Congratulations were being extended to *Alfred P. Sloan, Jr.*, '95, for becoming chairman of a group of 76 industrial leaders organized as the Committee for the Consideration of Inter-Governmental Debts; . . . to *Paul W. Litchfield*, '96, for being the second person to receive the "Spirit of St. Louis" aeronautical medal; . . . to *John Taylor Arms*, '11, President of the Society of American Etchers, for presenting to President Hoover a portfolio of the works of 20 United States etchers illustrating "important steps in the mental and executive growth of George Washington"; . . . and to *Joseph W. Barker*, '16, upon his election to the Presidency of the Illuminating Engineering Society.

Happy Birth Day!

■ Because the number of married students at the Institute has increased sharply in recent years, M.I.T. has entered into an agreement with the Boston Lying-In Hospital which will provide complete obstetrical care for M.I.T. students' wives. The plan, which is believed to be a pioneering program of its kind, was recently announced at a meeting of the M.I.T. Dames (an organization of student wives) by President James R. Killian, Jr., '26. Although the costs of the plan are borne by the student, the program guarantees excellent care at a fixed and minimum charge.

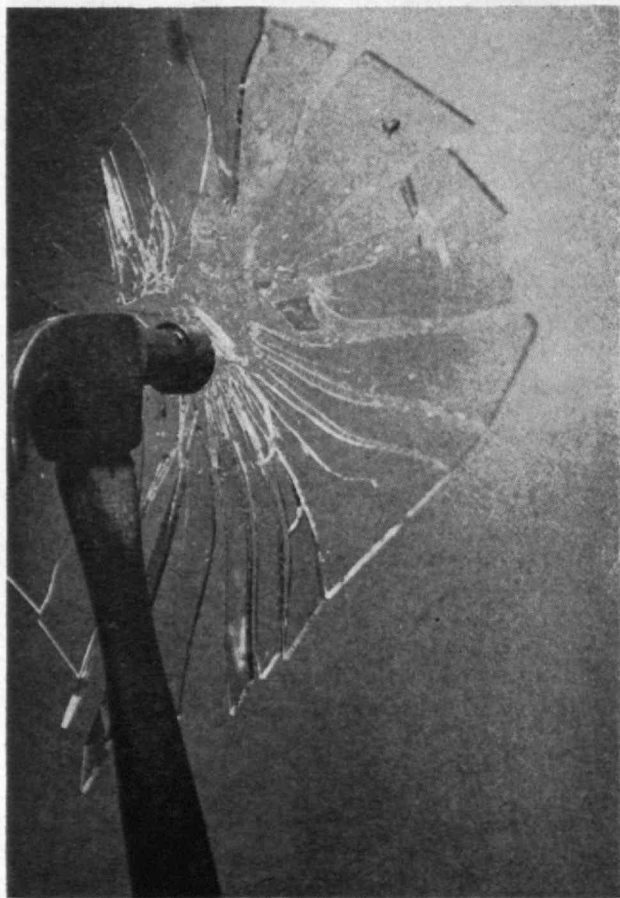
The agreement provides for complete prenatal care in the M.I.T. Medical Department, including all necessary laboratory work and the services of consultants, all medical care required at the Boston Lying-In Hospital and hospital charges for seven days, and *post-partum* follow-up at M.I.T.

About 1,000 of M.I.T.'s 6,000 students are married. These married students currently have about 1,000 children and it is estimated an additional 200 children will be born this year.

Dr. Ruby Jackson, a member of the visiting staff at B.L.I., has been appointed to the staff of the M.I.T. Medical Department, to head the new service. She will participate in both the prenatal and *post-partum* clinics at M.I.T. and will supervise the operation of the program at B.L.I.

In commenting on the plan, Dr. James M. Faulkner, Head of the M.I.T. Medical Department, noted that the majority of students are living on a minimum income and that most at M.I.T. come from other parts of the country or from abroad. "This new plan," he said, "is a means of providing the highest quality obstetrical care at minimum cost."

Dr. Jackson, who is the first obstetrician to be appointed to the M.I.T. medical staff, took her undergraduate work at Mount Holyoke College and her medical degree at McGill University. Besides being associate obstetrician at B.L.I., she is also associated with the Boston City Hospital and the Free Hospital for Women.



Reminiscent of the work in high-speed photography in the 1930's is this photograph of a hammer blow as it shatters glass, caught by Harold E. Edgerton, '27, Professor of Electrical Measurements at the Institute.

M.I.T.-Harvard Synchrotron Begun

■ Building of a six billion electron volt accelerator in Cambridge formally began on November 4 with ground-breaking ceremonies in which J. A. Stratton, '23, Chancellor of M.I.T., and Nathan M. Pusey, President of Harvard University, took part.

The new accelerator, which will ultimately produce the fastest nuclear particles yet achieved by man, is being designed and will be operated jointly by scientists of the Institute and of Harvard University. The contract for the accelerator will be administered by Harvard University. This \$6,500,000 contract for the new research instrument was signed last spring by the Atomic Energy Commission.

Construction under the A.E.C. contract is expected to take more than two years. Initial operations of the new accelerator are planned for January, 1960. When completed, the Cambridge Electron Accelerator will be the most powerful electron accelerator in the world. The new accelerator will be devoted to basic, unclassified research on the properties of the sub-nuclear particles and of the forces which hold the nucleus together. It will be located near the Harvard Cyclotron.

The new machine — a synchrotron — will accelerate electrons to very nearly the speed of light and in the process will increase their mass by 12,000 times. At this speed, these electrons and the super-energy x-rays which they produce will be able to break apart the protons and neutrons which are building blocks of atomic nuclei. Studies with this new research tool will make possible important new knowledge about the properties of the sub-nuclear particles and of the forces which hold nuclei together. It is those forces which supply the energy released in nuclear fission or fusion and which promise untold new sources of power for the future.

The circular tunnel building for the accelerator will be placed below ground, sheathed in concrete and with a five-foot earth-fill over the top. Heavy concrete blocks forming a portion of the wall can be arranged to allow narrow beams of radiation to emerge from the synchrotron into the large experimental building where research experiments will be located. This heavy shielding will eliminate any possible radiation hazard from the high-energy electron beam.

A dozen accelerator scientists and engineers are carrying out the basic design for the synchrotron under the direction of M. Stanley Livingston, Professor of Physics at M.I.T. About 20 scientists from M.I.T. and Harvard are assisting as advisers in the design planning.

The executive committee to set policy includes: Dean McGeorge Bundy of Harvard, chairman; Major General James McCormack, Jr., '37, Vice-president for Industrial and Governmental Relations at M.I.T.; Professor Martin Deutsch, '37, of M.I.T.; Professor Nathaniel H. Frank, '23, of M.I.T.; Professor David H. Frisch, '47, of M.I.T.; Professor Edward M. Purcell of Harvard; Professor Norman F. Ramsey of Harvard; Edward Reynolds, Administrative Vice-president of Harvard; Chancellor J. A. Stratton, '23, of M.I.T.; and Professor J. C. Street of Harvard.

Industrial Relations

■ The 20th anniversary of the Industrial Relations Section at the Institute was celebrated on November 1 with a high-level conference on "The Next Twenty Years in Industrial Relations."

The M.I.T. Industrial Relations Section, a division of the Department of Economics and Social Science in the School of Humanities and Social Studies, is the third oldest center of its kind in the country.

The conference was attended by invited guests, including about 225 company, union, and academic personnel with a special interest in the M.I.T. industrial relations program. Principal talks at the morning and afternoon sessions included:

"What Will Collective Bargaining Look Like in Twenty Years?" by George W. Brooks, Director of Research and Education, International Brotherhood of Pulp, Sulphite and Paper Mill Workers; "The Utilization and Development of High-Talent Man Power in American Industry," by Frederick H. Harbison, Director, Industrial Relations Section, Princeton University; "Protecting the Civil Rights of Union Members," by Clark Kerr, President, University of California; "Trends and Future Problems in Collective Bargaining," by Leland Hazard, Vice-president and General Counsel, Pittsburgh Plate Glass Company.

Secretary of Labor James P. Mitchell delivered the principal address at the closing session of the conference in Kresge Auditorium on Friday evening, November 1. Mr. Mitchell's talk on "Looking Ahead in Industrial Relations in the United States" was open to the public.

Regarding the important problem of use of high-talent man power in a technological society, Dr. Harbison's remarks are abstracted as follows:

It is obvious that the trend in modern industry is to consume more and more brains and less and less brawn. All kinds of technological change increase the proportionate requirements for high-talent personnel — for scientists, mathematicians, engineers, chemists, administrative staff specialists, and high-level managers. Automation always increases the requirements for brain power; its principal human consequence is not the displacement of people but rather the increasing quantity of high-talent man power which it consumes. Wherever innovations are made — in new products, new processes, new techniques of control, new methods of marketing, or new ideas in management — there is need for highly trained technical man power. . . .

Much of management's effort in the past has been directed toward treating the common man fairly and equally. But the skills and concepts which have been useful in dealing with the common man are not always those most appropriate for dealing with high-talent man power. . . .

If management can solve these problems there is good reason to expect that professional personnel will *not* be organized. It is significant that the few unions of engineers and scientists which exist today have as one of their major goals in bargaining the recognition of the professional interest and status of their members.

A proposal for management-induced strikes was made "without ill-will or belligerency" at the conference by Leland Hazard. Mr. Hazard told the audience of business, labor and academic leaders that inflation is the great issue of our time and that management has the duty to halt inflation by saying no to union demands for wage increases.

"Because of the wage inflation spiral," Mr. Hazard declared, "the American system itself is in jeopardy." He expressed little sympathy for those who think inflation can be held to a perpetual, innocuous, not to say beneficial, creep. "In a common-sense American way," he said, "most of us reason that there must be a top, and that even a creep can lift us in time to a dizzy zenith from which a fall could be fatal. . . . Management must begin now to refuse wage increases even though we know certainly that our refusal will produce strikes. . . ."

Mr. Hazard told his M.I.T. audience: "I believe that top-level labor and top-level management and top-level government must come together in an open public, widely publicized conference — one in which all masks come off, all pretenses are abandoned in a collaborative search for the key to greater capitalistic success — perhaps the key to the salvation of capitalism."

Mr. Mitchell stated that the shortage of scientists and engineers is front-page news; but equally important is the shortage of labor, people who can put the engineers' and scientists' ideas into effect. Unions have fallen down in one area of their responsibility: there should be an increase in the numbers of union members; he did not mean that all labor should be unionized, but he would like to see growth "based upon the recognition of laborers that they want to — and will benefit from — joining." Trade union leaders must always feel they are dealing with human beings (this in contrast to management, which does not deal exclusively with human problems); "we must preserve individual freedom and rights, must resist every move that tends to make man part of a mass."

Biosciences and Satellites

■ The first meeting of the Alumni Council for the current year — the 326th such meeting to be held — took place at the M.I.T. Faculty Club, Sloan Building, on Monday, October 28. Gilbert M. Roddy, '31, President of the M.I.T. Alumni Association, opened the dinner meeting which was attended by 177 members and guests.

As usual, matters of business occupied the first portion of the meeting, but the two speakers featured on the program delivered talks of particular interest and timely importance. Professor Richard H. Bolt of the Department of Electrical Engineering, and now on leave of absence from the Institute to assist in the expanding work of the National Institutes of Health, spoke on "New Trends in Biophysical Science." H. Guyford Stever, Associate Dean of the School of Engineering, chose "Satellites" as his topic.

In his key position as principal consultant to the Study Section on Biophysics and Biophysical Chemistry of the National Institutes of Health, Dr. Bolt is responsible for the planning and co-ordination of a

new program aimed at stimulating and developing, on a national scale, the rapidly growing field of biophysics.

The application of the physical and engineering sciences to the investigation of the life sciences is opening up ever-expanding horizons in biomedical research. The National Institutes of Health has recently placed substantial funds at the disposal of the Study Section to stimulate research and training in biophysics. Dr. Bolt told how this program stimulated teaching and research in biophysics, enumerated the benefits resulting from the interchange of ideas and information on an inter-disciplinary basis, and alluded to some of the work being done on these fronts by members of the M.I.T. Faculty.

Dr. Stever, formerly Chief Scientist of the U.S. Air Force, related that some of the earliest technological progress in rocketry and space travel had been made by Russian scientists. American pioneers in this field were fewer in number than should have been the case. During World War II, the Germans took the lead in developing rockets for military purposes. Following World War II, the United States and the U.S.S.R. both benefited from German progress in rocket developments. The Russians themselves have made remarkable scientific progress, and Dr. Stever felt it was an error to underestimate the technological ability of Russian scientists.

Because the Russian scientists have lived up to essentially all the claims they have made in the past with respect to A- and H-bombs, Sputnik, and Inter-Continental Ballistic Missiles, Dr. Stever believes that we, in the United States, should no longer discredit the current Russian statement about their Sputnik and other rocketry advances. In his opinion, the Russian scientists are tops in this field.

Earlier, in the business portion of the meeting, Donald P. Severance, '38, as Secretary of the Association, announced that: (1) between April 22 and October 25 visits had been made to 26 different M.I.T. clubs in all parts of the world, by 16 different members of the Council or M.I.T. staff; (2) a new M.I.T. Club of Colombia had been established; and (3) that Regional Conferences were to be held this year (1957-1958) in Pittsburgh and in Washington, D.C. In addition, Mr. Severance reported changes in class affiliation, membership of Visiting Committees, newly appointed class and club representatives on the Alumni Council, and the fact that the Executive Committee had voted to increase the number of associates on the Alumni Council from 35 to 50.

As chairman of the Alumni Fund Board, Dwight C. Arnold, '27, announced that, as of October 25, slightly more than 1,500 Alumni had already contributed \$47,000 to this year's Fund. This year personal solicitations will be carried out in 135 areas, in contrast to the 73 regions set up last year.

In the absence of Charles E. Fuller, '92, George Owen, '94, presented a report for the Committee on Resolutions for the late Harry J. Carlson, '92. President Roddy called upon the members present to accept the resolution by a rising vote.

Following an extensive period of questions on rocketry, space travel, and missiles, the meeting was adjourned at 9:55 P.M.

William Barton Rogers

In an address at William and Mary College on the life of the founder of M.I.T., President Killian reminds us that:
"If we are to survive as a nation, science most certainly will play an increasingly large part in our national life."

by JAMES R. KILLIAN, JR.

As a native southerner I find special satisfaction in returning to the South to represent today the Yankee institution that was created by an alumnus and former professor of William and Mary. I bring greetings from M.I.T. to William and Mary, and express the privilege and pleasure which we feel in Cambridge in joining this gracious tribute to the remarkable man in whose fame both institutions share.

As my share of this tribute to William Barton Rogers, I wish to recall the ways in which his student, teaching, and professional experiences in the Commonwealth of Virginia shaped his ideas and career and foreshadowed the institution he fathered in the Commonwealth of Massachusetts. I then wish to show, in conclusion, how Rogers foresaw with prophetic vision the educational needs of the United States today and how some of the ideas he fathered, and not yet fully utilized, are still needed if our education is to meet the needs of Twentieth-Century America.

And speaking personally, I experience sentiments of delight and gratitude and humility, as I receive your generous accolade, accepting it as an expression of your esteem for the institution I head. You do honor to that institution in permitting me to stand here in this "shrine of learning and inspiration" associated with the memory of scholars, patriots, and statesmen.

It was indeed Virginia that nurtured Rogers and cared for him and gave him the field of action that brought him to scientific and educational maturity. It was in this Commonwealth that he became state geologist, and successively professor of natural philosophy at William and Mary and the University of Virginia. The realization of his plan for polytechnic education, emphasizing the application of science, was to come with the founding of "Boston Tech" in 1861; yet it was here in Virginia that his scientific and educational beliefs came into focus.

In 1828 upon introducing his first course in natural philosophy at William and Mary, Rogers stated:

I would solicit your attention to the views which I shall present in illustration of the history, nature, and utility of Physical Science generally. . . . In presenting these views, I propose—

First, to allude to the relative proficiency of the ancient and modern world in Science and the Arts

Secondly, to exhibit some general ideas in relation to the material world, and

Thirdly, after defining the science of Natural Philosophy and tracing the events which separate it from Chemistry, to adduce a variety of illustrations to evince its utility.

Here are the seminal ideas which were to give direction to Rogers' later educational philosophy — his humanistic view of science, his use of the historical approach, his fusion of pure and applied science, and of the cultural and utilitarian values.

While breaking unharrowed ground in educational theory, Rogers simultaneously did creative work as a scientist. He was a true naturalist, as the Nineteenth Century understood the word, with interests covering many more specialized areas. In his early years his work centered around chemistry and physics. But, his fame rested upon convincing American geologists that the time had come to turn from purely descriptive work and to venture into dynamic geology. The theories of William and his brother Henry, upon the unfolding of the Appalachian mountain chain, have in the main survived the test of a century. Throughout his life Rogers had a keen interest in the development of national societies as a means of strengthening the scientific professions. He not only assisted in the organization, but also served as president of both the American Association for the Advancement of Science and the National Academy of Sciences. However, his most important role was in the enlargement of the concept of technological education.

Colonial America fully shared the Seventeenth-Century faith that natural science would prove to be the relief of man's estate. Those American scientists, few in number and usually either planter, merchant, or cleric by profession, could on occasion concern themselves with the general theories of science. Yet on the whole they were inclined, by the pressing problems of survival, conquest of the wilderness, and adjustment to their fellow men, to be more concerned with its utilitarian aspects. Ingenuity was displayed in applying scientific principles to inventions designed to control nature, promote human comfort, and make a profit.

By 1825, interest in natural science no longer was the esoteric concern of the learned men and the cultivated few: it was the concern of all. The economic expansion of the country, the gradual opening of the West, and the growth of industries, greatly increased the need for a deeper knowledge of the resources of the nation. What treasures were buried in its rocks,



Courtesy of College of William and Mary

Scene at the College of William and Mary much as it must have been when William Barton Rogers began his teaching career in Williamsburg, Va.

hidden in its soil, lurking in the molecules of matter? How could nature be controlled to offer better opportunities for man? But the existing educational institutions were still inadequate in facilities and qualified personnel to meet these demands.

College education was still centered upon the study of the classics. Natural science was considered of relatively little importance, in comparison, except for mathematics. The colleges, as a rule, still believed that for "training the mind," Caesar, Plutarch, and Euclid were unsurpassed. Applied science as a part of the college curriculum was almost nonexistent. A few schools, notably Yale and Williams, had hesitantly and half-heartedly attempted to teach the application of scientific principles to the productive arts. Rensselaer Institute under Amos Eaton and the United States Military Academy under Sylvanus Thayer had already pioneered in the training of science teachers and civil engineers, respectively. The United States was definitely lagging in technological education relative to Europe where engineering had long been recognized as a profession. The Ecole Polytechnic in Paris, the Bergakademie at Freiburg, the Technische Hochschule in Zurich—all had already achieved a highly intellectual, scientific and analytical approach to education for the technological services demanded by state and industry.

The part played by southern institutions in the beginnings of scientific education in the United States has only recently been recognized by historians. At William and Mary particularly, long before the Revolution, a higher and more thorough education was available than perhaps anywhere else in the American colonies. The College, since the establishment of its first Chair of Natural Philosophy and Mathematics in 1712, had charted the path of scientific education. This was particularly manifest under the tutelage of Dr. William Small who, as a physician and

professor of natural science at the College from 1758 to 1764, was the enemy of all narrow dogmatism of the classical education. Thomas Jefferson said of him: "He fixed the destinies of my life." Dr. Small innovated the lecture system at William and Mary, and, it is believed, in all America as well, a crucial break with the traditional method of pure memory lessons and recitations by question and answer, thus adding another to the long list of educational priorities at William and Mary. It is interesting to note that the introduction of the lecture and demonstration method in the Chemistry Course at Harvard did not occur until 1851, some 90 years after its introduction at William and Mary.

These distinctive features of William and Mary must have exerted an influence upon Rogers when he entered as a student at the age of 15 in 1819. His father, Patrick Kerr Rogers, M.D., in the meanwhile had been elected to the Chair of Chemistry and Natural Philosophy at the College, a worthy successor to men like Small, Bishop James Madison, and Robert Hare, who made important contributions to early American science.

Thoroughly dedicated to education and science, Rogers left his home and the college in 1825, a most propitious time. The United States was a scene of feverish ferment, both politically, economically, and socially. The cultivated physicians, merchants, planters, and ministers, whose avocation was science were being succeeded with professional scientists and men were beginning to find a career in science. Devoting their entire time to laboratory and field work, this group was being given increasing support by colleges and government. Equally important was the growing awareness by people from all walks of life that science promised a better life. The contagious interest in the popularization of science, evidenced in the Lyceums and the Mechanics' Institutes,

now enabled men of science to earn money as lecturers. The promotion and organization of science resulting from the growing spirit of professionalism, from patriotic zeal for achievements, and from the needs of commerce would alone have constituted a new chapter in the history of American science. But the increasingly close collaboration between scientists and practical men and the quickened tempo in applying scientific principles to the practical arts heralded a new era. The day of the machine and technology were at hand.

It was a fortunate turn of circumstances that led Rogers first to seek employment in Baltimore after his student days at William and Mary. There, the citizens gave ardent support to the movement in scientific education for laymen which had been sweeping the large cities since 1820, and Rogers rode the wave of this enthusiasm.

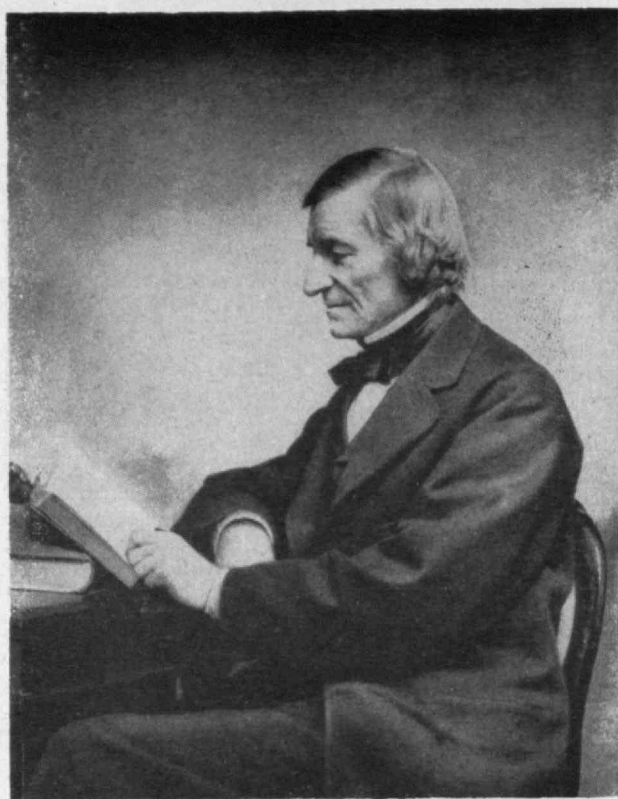
The Maryland Institute, with a most successful patronage of its library, geological cabinet, philosophical equipment, and lecture series, provided fertile ground for Rogers' talents and for developing his appreciation of the social values of applied science. By 1828 he was offering a lecture course on railroads which apparently captured current interest in internal improvements.

Not content to reach only the adult population, Rogers presented a comprehensive proposal to the Maryland Institute for a new type of high school; the framework of his plan is still evident in vocational high schools today: aiming "to impart such knowledge and to induce such habits of mind as may be most beneficial to youth engaging in mechanical and mercantile employments — the study of mathematics to be an object of primary attention." Circumstances affected Rogers' future at this point. Upon the death of his father in 1828, he was elected to the Chair of Natural Philosophy and Chemistry at William and Mary, thus diverting him from carrying out his plans for secondary education.

For seven years Rogers served his alma mater as one of its most distinguished faculty members. In 1830 it is recorded that his classes were the largest in the College. His concern for yoking science with technology is evident from the description of the senior natural philosophy course which embraced "Dynamics, Mechanics, Electricity, Meteorology, together with the practical subjects of materials, the construction of the watch and clock works, of roofs, arches, bridges, roads, the steam engine, and elementary principles of architecture." That must have been quite a course!

Rogers — the Geologist

Fired by the zeal of his brother Henry, Rogers in 1833 turned his research from physics and chemistry to the field of geology, his chief scientific interest for the remainder of his life. Early American geology had been confined mainly to observation and classification, with constant debate between the Neptunists and the Vulcanists as to origin of the earth's surface. Rogers, along with Agassiz, Silliman, and Dana, pioneered original theories of dynamic geology. Rogers' most noteworthy contributions in geology



Portrait photograph of William Barton Rogers as he appeared while serving as first president of M.I.T.

were upon the physical structure of the Appalachian mountain chain and the tertiary formation of Virginia. His interpretation of the mountain-forming processes still largely holds today.

By the end of the second decade of the Nineteenth Century, the economic expansion of the country, with its growth of industry, agriculture, and mining, called for a wider use of science. Interest came not only from utilitarians, but also from enthusiasts for education, for knowledge, and the cultivation of the arts and sciences. These groups pressed the national and state legislatures to furnish funds for the support of research into the natural resources of the nation, with geological surveys perhaps the most important single demand.

It was only fitting that Virginia in 1835, following the earlier examples of Massachusetts, New Jersey, and North Carolina, should appoint William Rogers its leading Scientist, to head the Virginia State Geological Survey. For six years, until the legislature declined to appropriate funds, Rogers vigorously planned and prosecuted the exploration and mapping of the mineral resources of the state, while also carrying heavy academic and administrative responsibilities at the University of Virginia where he had been elected professor of natural philosophy in 1835. Considering the conditions under which Rogers traveled and studied the Virginias, his accomplishments assume heroic significance. Roads were few, maps were of a most general nature and scarce, and insufficient means were available to carry on proper field and laboratory studies. Yet, the results of the survey greatly stimulated the development of Virginia — and would have been more marked had it



The first Rogers Building, built on Boylston Street in Back Bay, Boston, served as the Institute's main academic building from 1870 to 1916. Students in the Department of Architecture used the old Rogers Building until 1938 when the new Rogers Building was built in Cambridge.

not been for the Civil War. Perhaps a more tangible effect of the Survey was upon Rogers himself, as it brought him into public notice and contact with fellow professional scientists, to broaden his own horizons regarding the interrelation of science and the social and economic environment, and to stimulate a dissatisfaction with his own narrow professional field with results of the highest benefit to education.

Since his move to the University of Virginia, Rogers had become immersed in college administration, for in 1844 he was chosen chairman of the faculty. This position strengthened Rogers' administrative and organizational skills, while affording him full opportunity to ponder Jefferson's educational ideas of universal education, stressing the use of science and technology for the betterment of society.

In this period of heavy responsibility, Rogers was thinking deeply about technological education and a grand plan for a new kind of institution was taking shape in his mind. It became apparent to Rogers that only through the formation of a new school, free from the vested interests of traditional education, devoted specifically to polytechnic education, could science and its practical application be placed in its proper perspective in the general system of American education.

It was not lack of loyalty nor respect for Virginia or its university that led Rogers to view Boston as the site for consummation of his ideas on polytechnic education. That city, with its flourishing arts and sciences, the center of factory- and machine-conscious New England, and philanthropic-minded families, was a logical location for a school devoted to technology. Such circumstances led Rogers in 1846 to prepare his famous "Plan of a Polytechnic School."

The proposal attracted nationwide interest, although it was not until 1861 that Rogers saw its culmination when the "Act to Incorporate the Massachusetts Institute of Technology" was passed by the Massachusetts state legislature "for the purpose of instituting and maintaining a society of arts, a museum

of arts, and a school of industrial science, and aiding generally by suitable means the advancement, development and practical application of science in connection with the arts, agriculture, manufacture, and commerce." The forerunner of a new type of educational institution, this was fully tuned to the changing technological character of the nation. It was to serve as the model for many other schools throughout the world. Although difficult to prove, the work of William Barton Rogers undoubtedly did much to pave the way for the Morrill Act of 1861, which led to the establishment of our great and unique system of land-grant colleges.

A New Kind of University

With his plan for a new kind of university Rogers stressed four fundamental principles.

First, he emphasized the importance of being useful. He had no sympathy with the prevailing view that the practical professions lacked dignity, or that utility corrupted liberal education. He was one of the earliest advocates of what James B. Conant has described as the philosophy of the modern American university, "a philosophy hostile to the supremacy of a few traditional vocations, a philosophy moving toward the social equality of all useful labor."

Next, Rogers stressed the educational gain derived from building a college program around a professional objective. He recognized that the discipline, the thoroughness, and the motivation inherent in a professional program have exceptional educational values. Today we see new formulations of this concept in programs such as that recently announced by the Johns Hopkins Medical School in which professional medical education starts after two years of college and general education continues in the upper and graduate years in parallel with professional studies.

Rogers' next principle, that of learning by doing, he expressed through the laboratory method of instruction. While this idea was not original with him, he gave it its first systematic application in America. In his educational thinking, Rogers always stressed method; in a time of skepticism, he had faith in the scientific method. He foresaw the far-reaching effects on higher education of the spirit and method of research, the concept which holds that learning thrives best in an atmosphere of creativeness and not one of imitativeness and antiquarianism. American universities were later to assimilate this idea from the German universities, but Rogers' idea was indigen-
enous.

Next, Rogers was emphatic in his belief that learning principles is more important than learning facts. "We believe," he said, "that the most truly practical education, even in an industrial point of view, is one founded on a thorough knowledge of scientific laws and principles, and which unites with close observation and exact reasoning," and note this, "*a large general cultivation.*"

Rogers' emphasis on principles grew out of his practical experience as state geologist in Virginia. In this work he was not content to limit himself to prac-

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The Antiquity of Disease

Evidence of disease antedates man's appearance on earth.

In less than a century, man has learned how to conquer most of the maladies that have afflicted him for ages

by JAMES A. TOBEY

DISEASE not only is as old as man but older. Maladies were rife upon our planet several hundreds of millions of years before the belated advent of what is politely known as the "human" race. Man was, in fact, a relatively late-comer in the animal life of our world, apparently having begun to evolve only about 1,000,000 years ago. Long before that auspicious event, at least half a billion years ago, the earth was inhabited by numerous other animals; the fishes, the reptiles, and eventually the mammals, many of which are now extinct. These prehistoric animals often were afflicted with disease.

If this statement seems to be a bit reckless, the answer is that it can be supported by scientific evidence. Some of the ailing prehistoric animals were considerate enough to die in places where their remains could be found and examined many millions of years after their demise. Investigations of these skeletons in geological strata and of whole bodies frozen in the ice of the northern tundra have revealed evidence of various diseases, some of them unquestionably of bacterial origin.

The Rachitic Reptile

In the dim and distant geological period known as the Permian, a huge and grotesque reptile called *Dimetrodon* roamed the plains of Texas, then as now the home of big and exaggerated things. This bizarre creature walked on four stocky legs, had a thick body something like that of a modern crocodile but heavier, with a big fan-shaped crest arising from the top of his back. This adornment looked something like that on the modern sailfish, but was larger and taller. The animal was carnivorous, a hunter of the less voracious reptiles who were herbivorous.

The skeleton of one of these ancient vertebrates, discovered some years ago in Texas, displayed definite evidence of a chronic bone disease, osteomyelitis, which, it is reasonable to assume, resulted from a fracture, with subsequent bacterial infection. Microorganisms were, in fact, found in conjunction with these remains, although their exact nature could not be determined.

The Permian period in which this rachitic *Dimetrodon* existed is estimated by geologists to have begun about 230,000,000 years ago and to have lasted for about 40,000,000 years. It was the final period of the Paleozoic era of some 300,000,000 years, an era which included the age of the great reptiles,

the saurians, practically all of which are now extinct with the exception of a few turtles, snakes, and crocodiles who somehow managed to survive the vicissitudes of the various Ice Ages and the other hazards of the times.

Old *Dimetrodon*'s bone disease, similar to the osteomyelitis which occasionally occurs in modern adults, seems to be the oldest known evidence of disease in any living thing. In the later Jurassic period there lived in England a crocodile whose remains showed an infection of the pelvis which had spread to the legs, the spine, and the palate. This second interesting incidence of ancient disease goes back some 175,000,000 years, plus or minus a few million.

Skeletal remains of the dinosaurs and other gigantic reptiles of the Jurassic period show that these ponderous creatures suffered from a variety of ills, including bad teeth, arthritis, spondylitis, and other abnormalities which can be detected in the bones. Like all animals before and since, they were plagued from time to time with fractures, wounds, and bites which apparently became infected in the ooze of the primeval swamps. Bacteria certainly must have been among the first forms of life on this earth.

By the end of the Mesozoic era, which began about 205,000,000 years ago and lasted a mere 75,000,000 years, all of the gigantic reptiles had become extinct. It is interesting to speculate upon the causes of the decease of these monsters, some of which were 70 feet long and weighed 50 tons or more. It is possible that drastic changes in the climate so altered the existing vegetation that the herbivorous types could not adjust to the new diets, and the carnivorous died out for lack of prey. It has also been suggested that these huge reptiles became biologically overspecialized and succumbed to a racial senescence. Add to these causes the depredations of insects and the ravages of disease, and we can see why the dinosaurs no longer are with us.

Man, the chronic killer of all other animals, including his own species, had not yet appeared upon the scene, but when he did, he too, became the victim of lowly bacteria.

The First Human Disease

About 300,000 years ago there lived upon the earth an ape-like creature who was not a true ape because he stood erect and walked like a man. This primeval

being was about five feet eight inches tall, weighed about 154 pounds, and had straight legs and free-swinging arms. He did not have much of a chin and his forehead receded like that of an ape, but his teeth were distinctly more human than simian. Last but not least, he possessed the outstanding human attribute, a brain, one which was much larger than that of any known ape, but considerably smaller than that of modern man. It is possible that he had the power of speech.

Who was he? The name given to this prehumanoid by the scientists is *Pithecanthropus erectus*, from the Greek *pithēkos* meaning ape, *anthropus* meaning man, and *erectus* signifying upstanding. The gentleman is also known as Java man because his remains, or some of them, were discovered on the Solo River near Trinil in Java between 1890 and 1892 by a Dutch army surgeon named Eugène Dubois. In deep deposits in this torrid, volcanic region, which had escaped the glaciers of the Ice Age and which had been once joined to Asia by a land bridge, Dr. Dubois discovered a fossilized calvarium or top of a skull, some teeth, a small portion of a lower jaw, and a femur or left thigh bone. Since all these parts were found within an area of about 40 feet, and no other bones were uncovered in the same vicinity, it could be reasonably deduced that they all belonged to one person.

The femur or thigh bone of old *Pithecanthropus* had upon it an unnatural growth which was examined avidly by the leading pathologists of half a century ago. They were more or less agreed that it was a morbid lesion which had healed. In modern medical jargon this abnormal condition has been described as "extensive exostoses along the lines of the tendinous attachment of the iliopsoas and pectineus muscles." In plain English this means that *Pithecanthropus* had an abnormal growth on the upper part of the bone where it joins the pelvis, a growth which indicated a chronic infection and thus the presence of bacteria. The same condition occurs occasionally in modern man.

The report of the finding of this ape man aroused such an acrimonious controversy that Dr. Dubois became disgusted with it all, packed up his specimens, and returned to Holland, where he refused to show them to anyone for nearly 30 years. When this priceless collection was finally revealed in 1923 to Dr. Ales Hrdlicka of the United States Smithsonian Institution, it turned out that Dubois had a number of excellent specimens of this most ancient being, although by this time he was convinced that they were the bones of a gibbon. Subsequent investigations in Java disclosed still other remains of *Pithecanthropus*, who is now generally accepted as an authentic representative of our earliest ancestors and as an indication of man's tremendously long process of evolution.

Many other venerable bones have been, of course, discovered in various parts of the world, such as Heidelberg man, the first known European; Peking man (*Sinanthropus pekinensis*), the earliest Asian; and a large group of prehumans in South Africa, little fellows about four feet tall, who are thought to be at least 1,000,000 years old. Both Heidelberg man

and Peking man rather closely resemble Java man, but are considered to be much older, probably about 500,000 years of age. So far, *Pithecanthropus* seems to present the only reported case of ancient disease.

The Ills of Neanderthal Man

When, however, we come to a much later period, the Stone Age of about 100,000 years ago, we find many more examples of disease in the primitive inhabitants of the times. In 1857 the remains of a prehistoric individual were discovered in the limestone caves at Neanderthal near Düsseldorf in Germany, and since that time his bones have been uncovered in many other parts of Europe. He was a contemporary of the mammoth and the mastodon, the cave bear, the woolly rhinoceros, the saber-toothed tiger, and other mammals now extinct.

Homo neanderthalensis was a brutish, shaggy, low-browed person who walked erect but with a gorilla-like stoop, as shown by his curved thigh bones. His teeth were distinctly human, but his mentality was low and his speech probably consisted mostly of grunts. He was, however, adept at fashioning crude flint weapons and tools and he was an accomplished hunter. He lived in caves, evidently employed fire, and must have had a very precarious existence, especially during the Ice Ages.

The vestiges of this Neanderthal man show that he was afflicted with rickets, arthritis, rheumatism, spondylitis, and dental diseases, and that he suffered from injuries and wounds which became infected and suppurated. About 20,000 years ago he disappeared completely from this earth, and most authorities believe that he was not an ancestor of modern man. When, however, one regards the appearances and the manners of some of the moderns who ride in our big city transit systems, one wonders.

The extermination of Neanderthal man might have been hastened by adverse environmental conditions, such as the climate and the lack of sunshine which promoted rachitic conditions in his womenfolk and made childbearing difficult. It is also possible that the Neanderthals were attacked and slaughtered by the later Cro-Magnon men, who were bigger and smarter and had better weapons. As in all such instances of man's inhumanity to man, Cro-Magnon may have captured some of the Neanderthal females, so that possibly some of the older strains actually did come down to us. Who knows?

These Cro-Magnon men who appeared in Europe at the end of the last Ice Age resembled modern man in most respects, except that they were more robust and had stronger jaws. They moved into the caves formerly occupied by Neanderthal man and decorated the walls with remarkable pictures in color of animals and hunting scenes and other events. They manufactured flint knives, hand axes, and other tools and artifacts, and they possessed a fairly advanced culture. They buried their dead, worshipped deities, domesticated animals, and undoubtedly were the founders of the first civilizations, probably from 10,000 to 15,000 years ago. They used their brains; they were definitely the ancestors of modern man.

(Concluded on page 122)

Science, Technology, and Society

While demanding the benefits of technology, the mass of our population remains in ignorance of the foundations on which our society is based. Progress is inconsistent with the trend toward effortless "education"

by LAWRENCE R. HAFSTAD

WHEN one reads the history of science one has the exhilarating feeling of climbing a big mountain. The history of art gives one an altogether different impression. It is not at all like the ascension of a mountain, always upward whichever the direction of one's path; it is rather like a leisurely journey across hilly country. One climbs up to the top of this hill or that, then down into another valley, perhaps a deeper one than any other, then up the next hill, and so forth and so on. An erratic succession of climaxes and anticlimaxes the amplitude of which cannot be predicted.^{1*}

Many of you will recognize the above as a quotation from George Sarton, the eminent historian, and will concur in the idea that in working in science one has indeed the "exhilarating feeling of climbing a mountain." As working scientists, and fully recognizing that we may be naive, we still cling stubbornly to the faith that we are somehow contributing to human comfort and human happiness, and that however stumbling our progress, this progress is upward.

The great acceleration of both science and technology on a world-wide scale since World War II seems to confirm this impression. So does the great increase in suggestions in books, and in articles in journals and periodicals, to the effect that we are on the threshold of a second industrial revolution. Many predictions are extant as to the high standard of living which will be obtainable in a matter of a few decades. The problem of the shortage of raw materials has been emphasized by various writers, but technological ingenuity in the development of substitutes is such that so far as *material* prosperity is concerned, the possibilities do indeed seem limitless.

Much has been written in recent months about the shortage of scientists and engineers. This seems to be a world-wide problem and, as might be expected, is most acute where the development of technology is the most intense. It would seem to be axiomatic that the brave new world of plenty so earnestly desired cannot be attained without an adequate supply of scientists and engineers. To me, and I am sure to many of you, it seems somewhat surprising that so much campaigning and propaganda should be necessary to correct a shortage so obvious. In this area, however disappointing and annoying delays may have been, forces are now beginning to act in the

direction to correct the dislocation. This at least is reassuring.

Following not more than a decade or two behind the Russians, in this country and in fact in the Free World at large, we are now belatedly beginning to use a very potent force — the incentive system — to correct the shortage. Once the forces acting can be identified, we can isolate trends and begin to foresee at least the immediate future. Accordingly, since this nation chose not to act on this problem until the shortage was upon us, I will now venture to predict the following sequence of events:

1. A continuation of the current hectic recruiting campaign with increasing salary scales for anyone with a semblance of training in science or technology, and particularly for people with advanced degrees;
2. A marked decrease in emphasis on quality in our schools to meet the increasing popular demand for quantity;
3. A period of progressively diminishing returns to industry and society from the attempt to substitute standardization and quantity for quality in an essentially creative activity;
4. A period of disenchantment with paper credentials as a substitute for education, and finally a renewed appreciation of scholarship and achievement.

There is nothing either profound or new in this cycle. It is an example of the "hunting" process under the action of central forces, which is familiar to all of us. It is interesting, however, to speculate upon the time scale involved.

There is now public recognition of the problem created by the shortage of trained personnel of all kinds. It happens to be, however, just about 10 years since this problem with regard to scientists and engineers had already reached the table-pounding stage on the part of a few forward-looking individuals in Washington, such as Vannevar Bush ['16], Merriam Trytten, and Alan Waterman. We must conclude, then, that in matters of this kind our particular type of society seems to have a time constant — an RC, or response time, if you please — of roughly 10 years. Successive responses to the four impulses listed above can therefore be predicted to require about 40 years! Now it is true that in the historical sense 40 years is not long in the life of a civilization, but one begins to wonder what the time constants are in competitive societies and how such societies are likely to react under similar impulses. Above all,

^{1*}Please see numbered references at end of article, page 120.

one wonders why, with our highly developed communications facilities, our response times should be so surprisingly long.

Perhaps no small part of the explanation lies in the fact that scientists and engineers, who have long been aware of this situation, are, after all, a numerically very small fraction of our population. Added to this is the fact that the effects on a society of the activities of this group are invariably long delayed. A complete work stoppage on the part of the creative scientists would not, for example, be felt by our society as a whole for a decade or more. Thus it is difficult for the majority of our population to appreciate fully the function or significance of this relatively inconspicuous group. After all, the larger affairs of our society are, and no doubt always will be (and quite properly), handled by nontechnical people.

It is interesting to speculate about the somewhat anomalous situation into which we have gotten ourselves. There seems to be a tacit, but not clearly expressed, assumption that the purpose of the kind of society we favor is one which gives the greatest good to the greatest number. Our society has seized upon technology as a clearly applicable means to this end, so far as gratifying material wants is concerned. One would then assume that society, or more accurately the nontechnical controllers of that society, would as a matter of enlightened self-interest pay particular attention to the education and training of an adequate supply of what they refer to as "technicians." Instead, it is the technicians, the scientists and engineers, who have been calling for an increase in the supply of talent even though it would be to their own self-interest to restrict this supply of skills and thus improve their bargaining position. As scientists and engineers we ask the question from time to time, "For what and for whom are we working?" The sociologists from whom we assume we should expect a reply seem bewildered that the question should even be asked. By them technology seems to be considered as some extraneous activity apparently introduced or perpetrated by the scientists.

It is this deeper conflict in outlook and attitude between the humanist or sociologist and the scientist or engineer which gives me the greatest concern. The shortage of scientists is serious — but here the incentive forces are being brought into play in a direction to correct the anomaly in due course. However, in the philosophical conflict, with our technology tending to become ever more complex, and with increasing specialization, unless current educational trends are reversed, the technical and nontechnical components of our society will continue to travel diverging paths, with hunting oscillations not of decreasing but of increasing amplitude.

As Sarton has pointed out, "The ominous conflict of our time is the difference of opinion, of outlook, between men of letters, historians, philosophers, the so-called humanists, on the one side, and scientists on the other."² Similarly, Mees has stated:

While the relation between the progress of scientific discovery and the structure of society is of the utmost interest and importance to those who desire to understand it or, still more, to control the changes that are occurring, there is a cleavage between those who follow the disci-

pline of history and of the humanities and those who are eagerly pursuing the quest for scientific knowledge. Humanistic learning is the learning of the ancients; it is a study of the accumulated thought of mankind so far as it has been transmitted to us. Scientific knowledge, on the other hand, is a development arising from the observation of facts and their classification into patterns. The separation of these two types of learning has always been unfortunate; at present it is serious, and it may, indeed, be disastrous.³

Many of you will recall that there is a principle in physics which says that in order for energy to be transmitted efficiently from one electrical network to another, it is necessary that there be an impedance match between the two circuits. Very similarly it has been my experience that for the transmission of information, or more accurately human understanding, between two individuals it is necessary that there be a matching of backgrounds. Historically such a matching has not existed between devotees of the humanities and of the sciences. So far as the development and enjoyment of the sciences by and for scientists are concerned, no matching is really necessary. Similarly, the humanities as a discipline are completely self-sufficient. If, however, the humanist chooses to use science as the basis for a technology designed to advance the standard of living of mankind, then it becomes incumbent on the humanist to so fashion an educational system that he can communicate with scientists and engineers. This he has failed and is failing to do. Teaching less science and mathematics and more art and music to scientists may enrich the life of the scientist, but it will not help solve the basic problem of the humanist, which is to create what he has concluded to be the good society. If there is to be a sizable component of technology in his good society, he must face the problem of matching impedances with the scientist.

Let us take a look at some of the facets of this problem which might have to be considered. Very early in my career as a student I became aware of the definition, "Life is Struggle," and in my day we were so reactionary that we even came to accept it. It also became clear to me that the struggle was for an intangible something called "Progress." This was a much more elusive concept and one which I have found intriguing even up to this day. Somewhat surprisingly, I learned that the idea of progress was itself a relatively recent concept in human affairs. Still more significantly, it was not accepted without considerable opposition and conflict. People were burned at the stake! All this, of course, is spelled out in the literature and is particularly well summarized in the too-little-known book by Professor Bury.⁴ The important fact which emerges, however, is that the idea of progress, and the development of technology, are inextricably interlinked. As stated by Mees, "Technology is at once the source and the justification for the idea of progress."⁵ That this is true seems to be accepted by scholars throughout the world as is evidenced, for example, by the determination of the underdeveloped countries to industrialize. The fact seems to be accepted everywhere except where it should be most obviously true and that is here in our own United States. Here in our society we demand

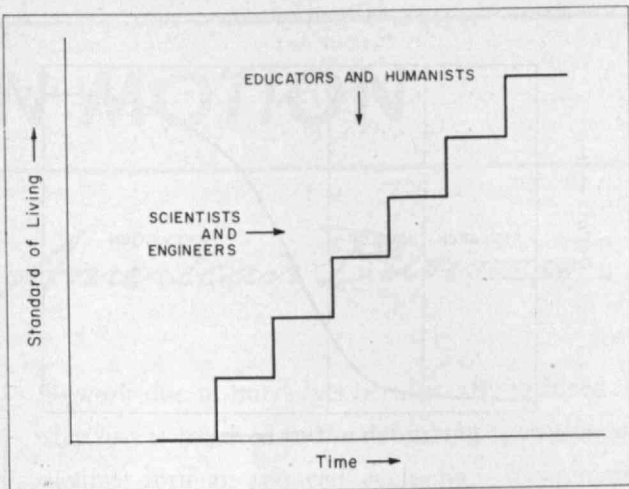
progress — in fact we seem to take it for granted as a law of nature — but there are influential people who seem to be doing their best in our education process to escape or circumvent science and technology, which alone can make progress possible.

Perhaps I have overstated my case. Let us hope so — but a review of some recent evidence may give us a perspective in which to view the problem. In a recent study of high school students reported from Purdue,⁶ it was found that: 14 per cent of the students think there is something evil about scientists; 30 per cent believe that one cannot raise a normal family and become a scientist; 45 per cent think their school background is too poor to permit them to choose science as a career; 9 per cent believe that one cannot be a scientist and be honest; 25 per cent think scientists as a group are more than a little bit “odd”; 28 per cent do not believe scientists have time to enjoy life; 35 per cent believe that it is necessary to be a genius to become a good scientist; 27 per cent think that scientists are willing to sacrifice the welfare of others to further their own interests.

This is indeed a devastating comment — either on scientists, or on our educational process, or both. With this the attitude among students, can there be any mystery as to why there is currently a shortage of scientists and engineers? Since the world managed to survive for some centuries before the advent of scientists or engineers, the attitudes expressed would be quite understandable if the students were or proposed to become mystics and lead the contemplative life, which certainly has its advantages. But these were normal American boys and girls demanding and getting 100-horsepower cars for transportation, radios, television, movies, juke boxes, and all the other paraphernalia of our modern civilization. How could they have grown to high school or college age without learning the simple facts of cause and effect with respect to the technological civilization in which they are clearly planning to live?

In this respect our school system is quite inadequate, in my opinion. The shortage of scientists and engineers is bad enough, but with some effort these immediate shortages can be corrected since the total numbers needed are not really large in proportion to the population. What is more serious (and more dangerous in the long run) is that the mass of our population, who, in a society dedicated to the greatest good for the greatest number, must in the end control it, remains in ignorance of the foundations on which that society is based.

The contrast between the studied complacency of the educators and the concern of scientists and engineers with regard to this situation can perhaps be emphasized or dramatized by Koester's device of using a staircase to show the effects of different points of view bearing on the same problem. In Fig. 1 the humanist or so-called “progressive” educator looking from above sees a series of plateaus or tableaux (since they are flat to him) and notes with amazement and delight that each successive tableau shows a successively higher standard of living. With only a limited imagination he can make the slight extrapolation to the point where no one has to work. Being foresighted, he places great emphasis on training



M.I.T. Illustration Service

Fig. 1. The standard of living rises with the passage of time, but this effect is seen differently by two important groups of persons.

for leisure. Being also sufficiently observant to note an increase of population with time, and being aware of the frictions and struggles brought about by individual differences, great emphasis is also placed on standardization. For the convenience of all concerned, why shouldn't the “lowest common denominator” solution be picked? From his point of view it makes sense.

Now look at the same staircase from the point of view of the scientist. He sees each plateau merely as a hesitation point between struggles to attain a higher level. To him progress represents work, and he is convinced that further progress cannot be made without struggle. To him there is nothing automatic or guaranteed in the comfortable and continuous progress which the humanist and progressive educator seem to take for granted.

A rough indication of the relative contributions of science and technology can be seen from Fig. 2, adapted from the book by Harrison Brown.⁷ This shows the extent to which science and technology have dominated modern life. Art, literature, poetry,

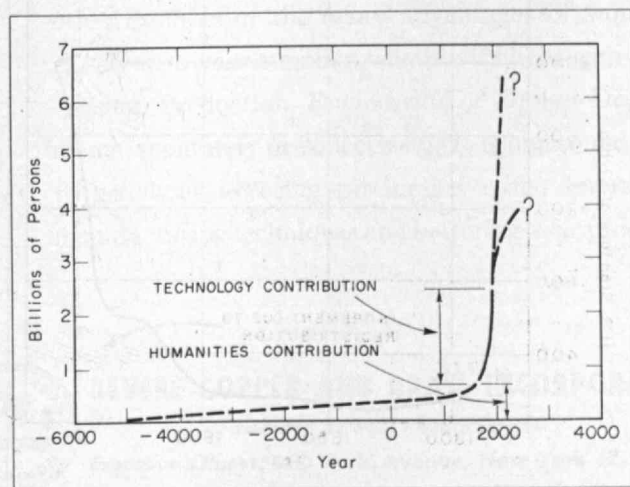


Fig. 2. The world's population has increased three times as much in the past three centuries as in all previously known recorded history.

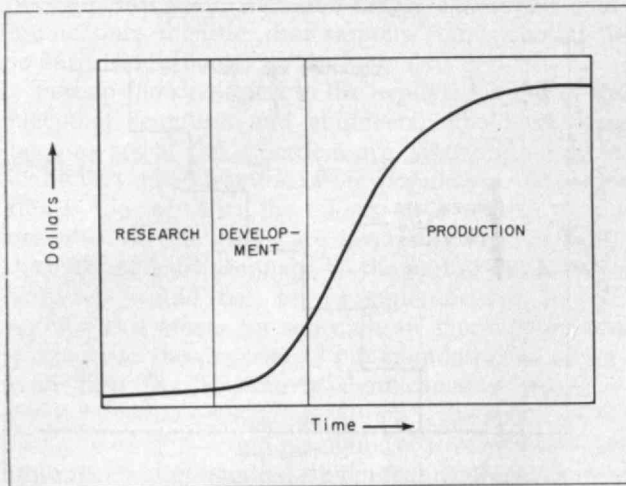


Fig. 3. Typical growth curve for total costs of new product. Research and development costs are low; production costs, relatively high.

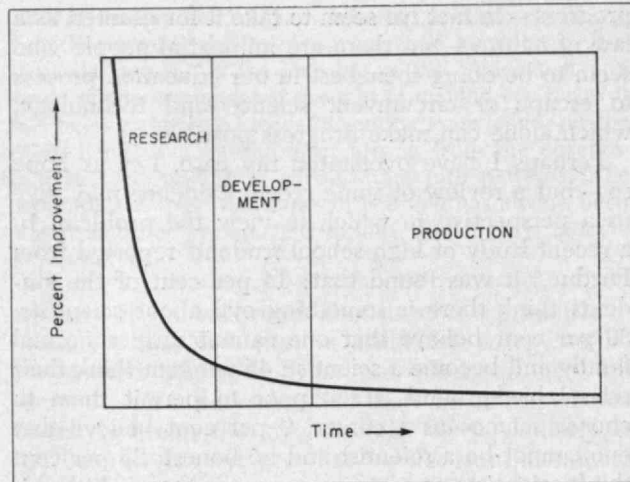


Fig. 4. Curve showing improvement of product plotted against time. Research makes large contribution; production, small contribution.

warfare, trade, government, law — all have been with us from prehistoric times. As H. G. Wells has pointed out, the first episodes in recorded history involve the quarrels of Sumerian priests. Apparently none of the accomplishments of these groups was sufficient to break the monotonous cyclical rise and fall of the same kind and level of civilization in merely different locations, such as in China, Egypt, Greece, and Rome. Taking simple survival as the lowest level of human happiness and integrating for all mankind, we find a total contribution for the humanities as given by an extrapolation to the present time, of the first part of the curve of Fig. 2. The rapid growth of the population curve after the Seventeenth Century is commonly attributed to the development of science and technology, so the relative contribution of these disciplines to humanity as a whole can be taken as roughly three to one over that of what used to be called the humanities. Considering the relative con-

tribution of these two kinds of activities to the good of mankind, one wonders whether perhaps the names should not be interchanged!

Since our society has chosen for itself a kind of civilization which is so overwhelmingly dependent on advances in science and technology, it is only prudent to ask how we can expedite our progress in these fields. Here is where the shortage of scientists and engineers comes in. I will not attempt to review but merely cite some of the many excellent and realistic articles on this subject. Significant, in my opinion, are recent articles by Stratton, Rassweiler, Rickover, Bestor, and Beckman.⁸

These articles, by unquestioned authorities in their fields, point out inadequacies in our present educational system in so far as the production of technical personnel is concerned. I agree heartily, but I wish to make a deeper criticism. Even if an entirely sepa-

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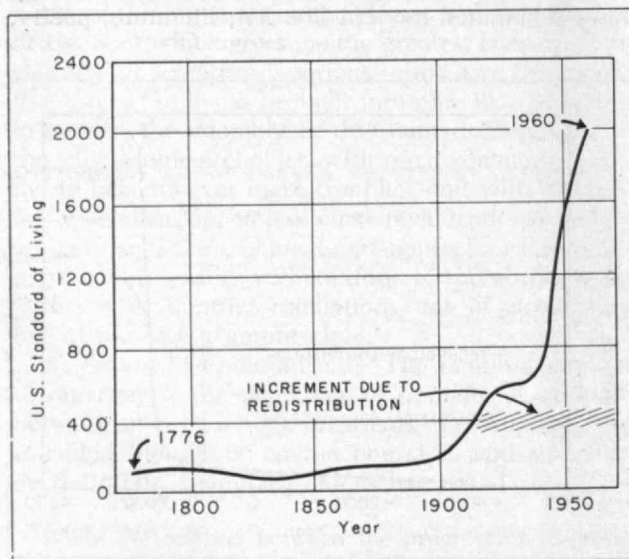


Fig. 5. Standard of living in the United States. Shaded area shows gain in standard of living due to leveling of incomes of all kinds.

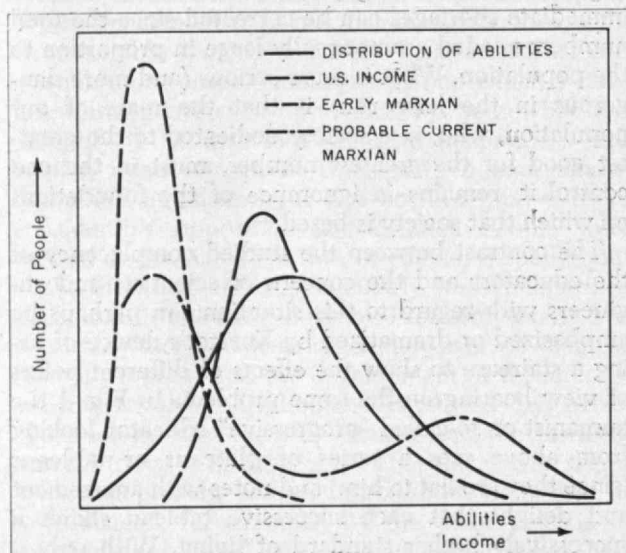


Fig. 6. Distribution of abilities of a population, together with distribution of income in two drastically different kinds of societies.

BUSINESS IN MOTION

To our Colleagues in American Business . . .

Under today's competitive conditions, a manufacturer can't afford to take anything for granted. He continually seeks to improve even the so-called "perfect" product and to reduce production costs.

One such progressive manufacturer, in reviewing the materials and processes used in making their spherical roller bearing cages, sought the opinion of others. One of those "others" was Revere's Technical Advisory Service, which was called in to review the kind of brass that was being used in the cages and to study the problem first-hand. This meant consulting with the engineering department as well as observing the manner in which the bearing cages were being produced.

After a careful study recommendations were made. The result was the adoption of specification changes in the brass strip used which, in addition to improving the quality of their roller bearing cages, gave this manufacturer the following money-saving advantages: One bore pressing operation has been eliminated. Machining is more easily accomplished. Less machining is required. Tool life has been increased with some speeds increased up to 100% and feeds up to 30%.

Rework due to burrs has been greatly reduced. One step less is required in the deburring operation while savings through reduced cycle time for remaining deburring operations are up to 40%. Chips are small now . . . there is no "angel hair" to clutter work area. Life of punch used in notching roller bearing cage has been doubled. Now a run may be completed with-

out making tool adjustments due to sharpening tools. Machining speeds and feeds have been substantially increased over those in machining the former alloy. Die setters report that considerable work has been eliminated in setting up the tools used. All of which resulted in substantial savings in time and money.

This is still another eye-opening example of Revere supplying the metal that will do the best job

and with the greatest economy . . . be it brass, copper or aluminum or any one of their alloys. It is also another example of the many advantages of working closely with *your* supplier, whether it be through Purchasing, Production, Engineering or Design Departments, separately or collectively. It is one sound way to go about lowering production costs, improving manufacturing techniques and bettering *your* product.



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rate educational channel were provided which more than supplied our foreseeable needs for engineers, I contend that the education of the rest of the citizenry should include a basic understanding and appreciation of our technological society, both its strengths and its limitations. Above all, at some point in the education process it should perhaps be brought to the attention of the students (very delicately, to be sure, to avoid psychological trauma) that progress cannot be made without struggle, nor freedom enjoyed without personal responsibility.

It has long been my contention that those who have *done* should teach, and accordingly that those who have taken an active part in creating our technological society should be best able to interpret it for others. Unfortunately, the very shortage of technical talent exerts great pressures on individuals skilled in these fields to concentrate on technical problems. Scientists and engineers are notoriously inarticulate, so a suitable education should include a heavy concentration on the arts of communication. This might be acquired in our elementary or secondary schools, but in our present predominantly super-kindergarten system of education it is postponed until college. Here it is in conflict with the needs of ever more highly specialized professional training. The engineer remains inarticulate and the general public uninformed; thus the impedance mismatch is continuously increased, not decreased, and must eventually result in instability.

Glenn Frank has stated this problem with fine understanding. He says:

The practical value of every social invention or material discovery depends upon its being adequately interpreted to the masses. The future of scientific progress depends as much on the interpretative mind as it does upon the creative mind. . . . The interpreter stands between the layman, whose knowledge of all things is indefinite — and the scientist whose knowledge of one thing is authoritative. . . . The scientist advances knowledge. . . . The interpreter advances progress. . . . History affords abundant evidence that civilization has advanced in direct ratio to the efficiency with which the thought of the thinkers has been translated into the language of the masses.⁹

In contacts with students and even with reasonably informed grown-ups, I have found that such simple and basic things as the relation between research and engineering, between technology and the standard of living, or between progress and incentive, not only are not understood but that the discussion of these concepts is itself a fascinating *new* experience. An Operations Research approach to some of these problems might prove quite rewarding.

Here are some simple examples which I have found to stimulate considerable interest in discussion groups.

First, in regard to the relation between science and engineering or research and engineering, let us look at Fig. 3. This curve shows the usual growth curve for costs of a project of some kind. Note that

the costs during the research or information-gathering phase are small. It is only at the beginning of the development or invention phase that there is anything tangible to consider and that costs begin to mount. It is here that the businessman first begins to take an interest, and it is this phase of the effort which he considers important.

To a research man, however, the picture looks entirely different. The business of the researcher is to get really new information, to discover a relationship which previously had never been known, to do something — not better or cheaper than somebody else — but to do something for the first time in the history of the human race. Research discoveries are rarely spectacular but may nevertheless be highly significant. Thus, to bring out what is important in research we might plot, not dollars expended, but the ratio of the information available in a certain field before an experiment and after an experiment. If something truly new has been discovered, this ratio becomes infinite and a replot of our previous Figure, in terms of this information ratio, becomes as shown in Fig. 4. This curve emphasizes basic research, the acquisition of knowledge for its own sake.

Scientists Do Not Create Technology

The scientist's work as a scientist is completed when a new item of information is established and recorded. It is no concern of the scientist, as a scientist, whether the information is useful or not. It is for this reason that we can say with conviction that it is not scientists who create technology. It is society itself which chooses to create a technology based on the information which the scientist has uncovered. This problem of application is the function of the engineer. At the beginning of the scientific era, science and engineering were widely separated in time. With the development of our current technological civilization, applications have followed more and more closely on the heels of discovery, with the result that in many fields the search for new information and understanding is carried out simultaneously with the application — that is, the effort to solve some practical problem. Though activities may overlap, the distinction in function remains. The same man who makes a discovery may choose, or be persuaded, to attempt to apply it to a practical problem. In this case he ceases to be a scientist and works essentially as an engineer, and is motivated not internally as a scientist but externally by society. I dwell on this point to counter the argument often advanced that it is the scientist who has created the complexities of our modern industrial civilization. I maintain it is not. It is society itself, and particularly the nontechnical part of society, which creates the demands which are the motive force behind our technology.

Let us turn to another basic question, the relations between standards of living, education, and technology. Much of the energy in our educational system these days is focused on new theories of teaching which will avoid grading and thus any semblance of conflict and competition. This is no

(Continued on page 118)

SEVEN AGES OF THE TELEPHONE

ALL THE WORLD'S A STAGE, and all the men and women merely players. . . . And one man in his time plays many parts, his acts being seven ages. At first the infant . . . SHAKESPEARE

All through the years, from babyhood on, the telephone is an important, indispensable part of almost everything we do. And as the hands that grasp the telephone grow in size and usefulness, so grows also the usefulness of the telephone.



BABY DAYS At first the telephone is just something that rings. But soon the lusty newcomer is saying "hello, Daddy" all by himself and listening in wide-eyed wonder to the magic of Daddy's voice.



GROWING UP It isn't long before the telephone becomes more than a magical fascination. It begins to be something for doing things. A particular pal to call. And a very necessary part of growing up.



DYNAMIC TEENS Life is now a whirl of activity. So many things to do. Girl talks to girl. And boy talks to girl. And there are two happy hearts when she says, "I'd love to go."



JUST MARRIED Two starry-eyed young people starting a new life together. The telephone, which is so much a part of courtship, is also a big help in all the marriage plans and in getting settled.



EARNING A LIVING The years go by and always there is the responsibility of earning a living. Here again the telephone is a speedy, willing, ever-present helper. It is a part of the daily work and the progress of almost everyone.



RAISING A FAMILY Now the telephone becomes more useful than ever. For how could Mother ever run her household and raise a family without it! Friends, relatives, stores, doctors, conveniences—all are so easy to reach by telephone.



IT'S GRANDMA NOW And now she's holding a grandchild on her lap. The telephone that has served her so faithfully now starts a new era of service. The cycle of life and the seven ages of the telephone begin all over again.

Working together to bring people together . . . **BELL TELEPHONE SYSTEM**

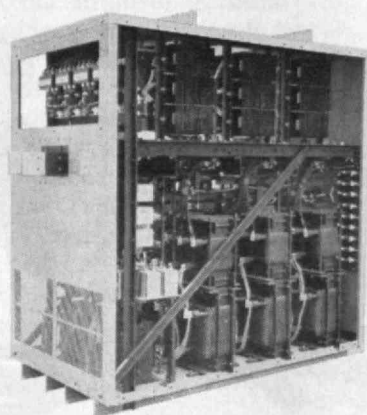


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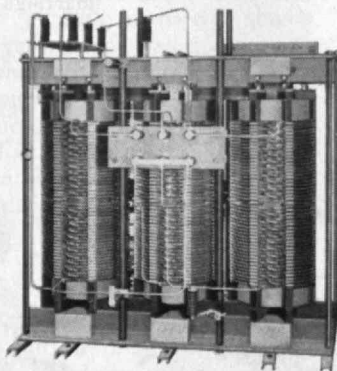
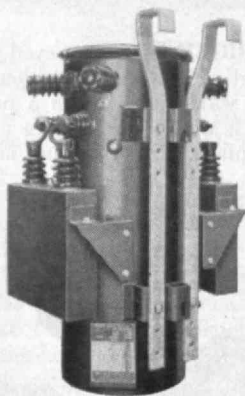
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SCIENCE, TECHNOLOGY, and SOCIETY

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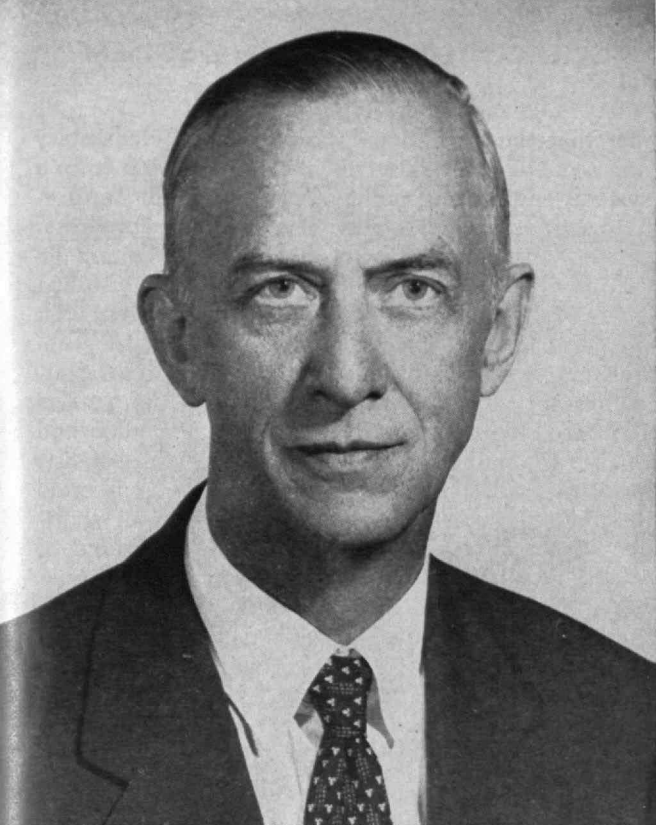
doubt desirable sociologically, but apparently so is a rising standard of living. This presents a painful choice. In technology if incentive is removed, so is struggle — and if struggle is stopped, so is progress. This leveling process could, of course, be carried out at any point in the history of a civilization, so it is of interest to see what would have happened had it been carried out at some previous time in our own history. The results are shown in Fig. 5.¹⁰ Who made the greatest real contribution to the goal of the humanist, the engineers or the self-appointed Robin Hoods of 1909, those people who thought all our social problems could be solved by a redistribution of the wealth at that time?

Finally, let us consider a little further the relationship between incentive and progress. Let us assume, following the late H. C. Dickinson of the Bureau of Standards, that the actual innate abilities of a population are given by a probability distribution such as the solid curve in Fig. 6. As a base for comparison, let us now imagine a perfectly "efficient and just" social system which extracted from each individual a contribution proportional to his ability and rewarded him in accord with his contribution. The dollar income curve would then coincide precisely with the ability curve. But there are many other criteria society can choose to specify the income curve. In the United States we originally chose to give "rate of progress" great importance in our specification, and emphasized incentive, but we balanced this with benefits for the underprivileged, which gave us a distribution curve, according to Dickinson, something like the dash-line curve marked "U. S. Income." The Marxian criterion, on the other hand, was "From each according to his ability to each according to his need." The experiment was tried, as we all know, and according to reports resulted in a peaking of the curve just at, or barely above, the subsistence level, as in the highly peaked curve at the left marked "Early Marxian." Clearly this represented a sharing of poverty, as Herbert Hoover has so aptly phrased it. This failure of a social theory forced the Soviet to adopt the "New Economic Plan," with a return to emphasis on incentive to bring out the potential contributions of the able. The new curve, of course, has a new specification which I am sure is intended to maximize progress. To attain such progress, however, the Communists have distorted their reward curve to some such as the double-hump curve, with the mass of the population at subsistence level and a pampered elite at the top. The stresses and strains thus introduced into their society are only now becoming evident.

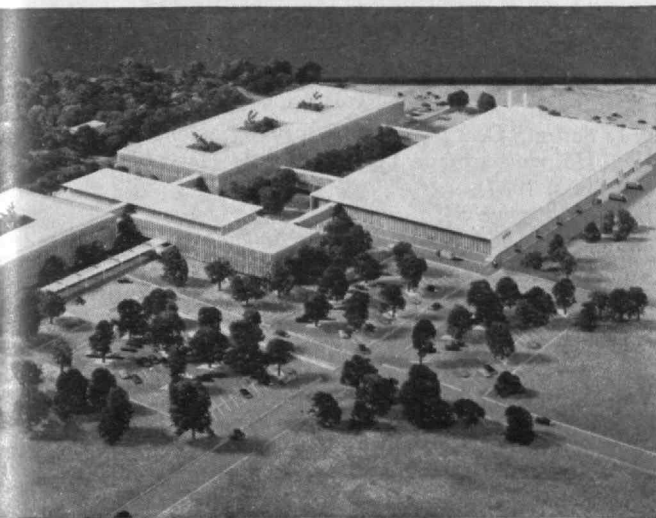
Conclusion

In summary, there is a continuing divergence in point of view between the sciences and the humanities. With the sciences, through the mechanism of technology, being called upon to make an ever-increasing contribution to a society as specified by the humanists, there is serious cause for concern in the

(Concluded on page 120)



Dr. Arne Wikstrom



Pictured above is our new Research and Development Center now under construction in Wilmington, Massachusetts. Scheduled for completion in early 1958, this ultramodern laboratory will house the scientific and technical staff of the Avco Research and Advanced Development Division.

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Dr. Arne Wikstrom
Special Technical Assistant to the President

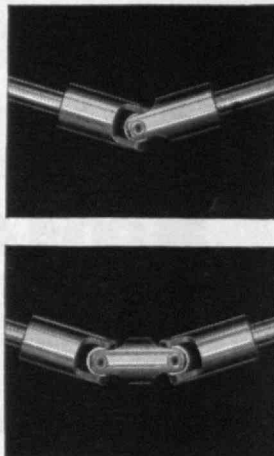
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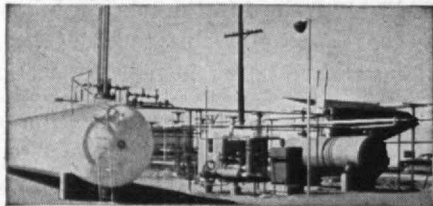
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SCIENCE, TECHNOLOGY, and SOCIETY

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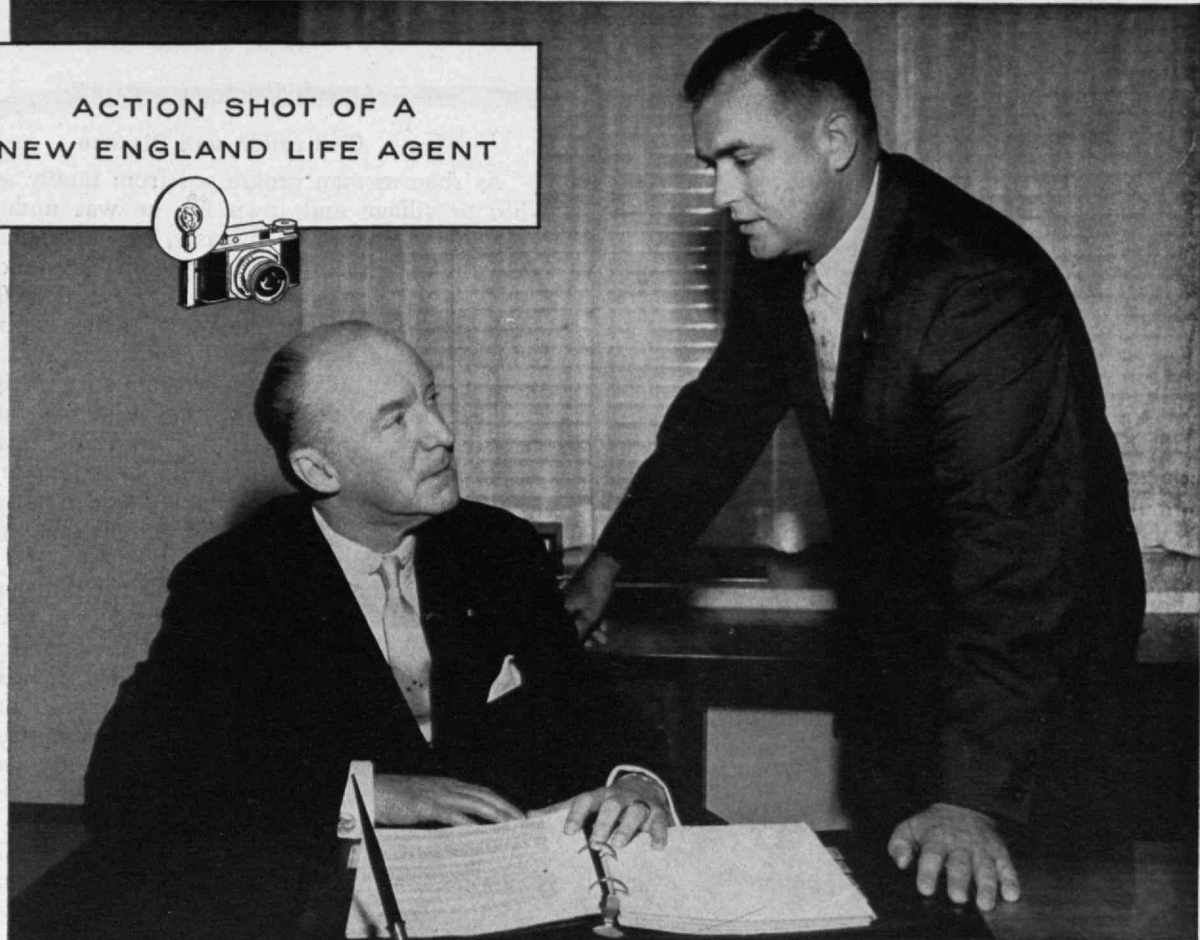
fact that the educational system at the elementary and secondary levels seems to be out of step from a systems-engineering point of view with the foreseeable needs of such a society. The desire for "progress" cannot be reconciled with the lack of attention to, and an incentive for, students of exceptional ability. Similarly the desire for "progress" is inconsistent with the trend toward effortless education, and the substitution of pastimes for disciplines. Finally, the assumption that a larger and larger population can be supported on and by the work of a smaller and smaller fraction of highly trained creative specialists leads to a social structure like that of an inverted pyramid. Even more acute than the current shortage of scientists and engineers is the shortage of people who both can and will carry responsibility.

With increasing complexity and specialization in the technical fields, the gap between the sciences and the humanities becomes an ever-widening one. This adverse tendency could be reduced by insuring that students of science were given a better grounding in the humanities, while students in the humanities were given a better background in science. This, however, would require more rather than less disciplined study in both fields, and runs counter to the current educational trends.

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10. The standard of living data are from a recent Brookings Institution study. The increment shows the increase in average standard of living due to a redistribution, or leveling, of income of all kinds, salaries, rents, dividends, and so on.

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ANTIQUITY OF DISEASE

(Concluded from page 110)

Civilization and Disease

As soon as man progressed from family and clan life to village and town life he was undoubtedly plagued with crowd diseases, or epidemics. Since the annals of recorded history go back no more than 6,000 years and are pretty dim beyond 5,000 years ago, we do not know much about what happened in the early stages of so-called civilization.

Between 3,000 and 4,000 years before Christ, great civilizations were, however, flourishing in the fertile crescent between the Tigris and Euphrates Rivers in Mesopotamia and also along the lush valley of the Nile in Egypt. Other notable civilizations existed then or later in Chaldea and Phoenicia and across the sea in Crete.

Perhaps the first known historic allusion to a pestilence was written on a clay tablet in Asia Minor about 3,200 years ago. On or about 1334 B.C. a king of the Hittites named Arnuwandas III died of a plague after a reign of only one year. His successor, Mursilis II, thereupon wrote or had written upon clay tablets an impassioned literary document entitled, "Prayers in Time of Plague," in which the harassed monarch offered lavish atonement gifts to the principal deity, the Hattian Weather God, imploring him to stay the pestilence which was upon all the land. We do not, of course, have any inkling as to the nature of this great epidemic. The Hittites, incidentally, also left behind a number of interesting medical treatises, as did the Sumerians and the ancient Egyptians. From them we can glean the facts that many diseases were rife in these venerable civilizations. Examinations of thousands of ancient Egyptian mummies likewise have shown the existence of numerous maladies, some of an infectious and contagious nature. But, as Kipling says, that is another story.

From 300,000 years ago to 3,000 years ago to the present time, man has been afflicted with individual and epidemic and pandemic diseases, some of which have come dangerously close to the extermination of the human race. In the short space of a little less than a century, a fraction of a moment in geologic time, he has learned how to conquer most of the maladies with which he is and has been afflicted. This is a noteworthy achievement.

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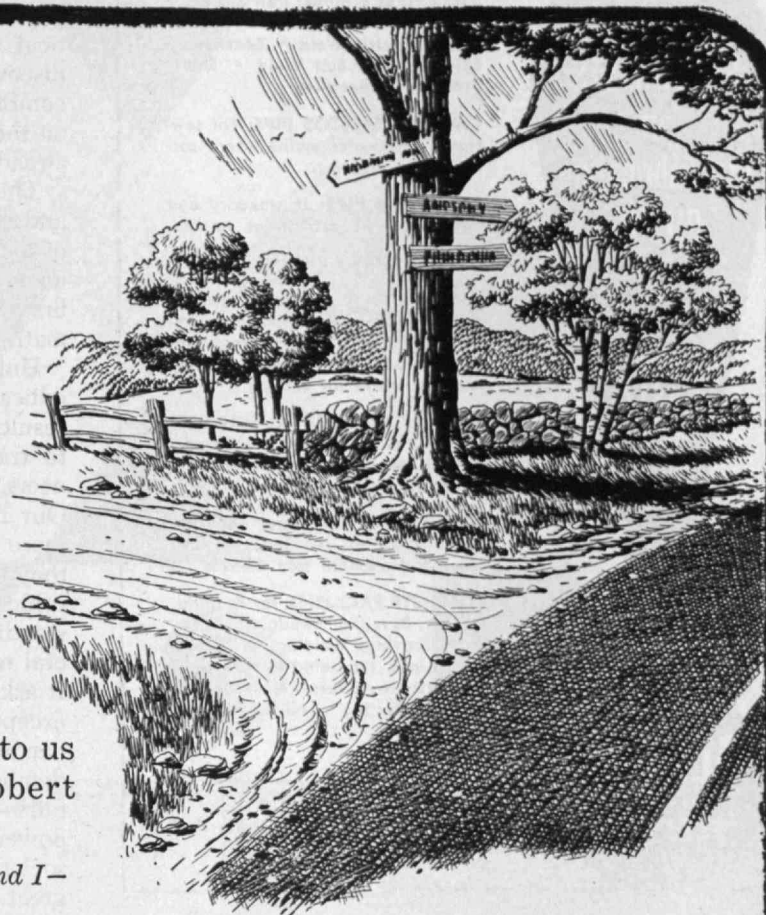
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WILLIAM BARTON ROGERS

(Continued from page 108)

tical findings. He was constantly going deeper to discover new principles and concepts. We see this combination of pure and applied science in his work on the Appalachian mountain chain to which I have already referred.

This symbiotic relationship between basic science and applied science found expression in his concept of technological education, and only today are American schools of engineering beginning to achieve first-rate education in such basic subjects as science, mathematics, and the humanities.

Unfortunately our national system of engineering education failed to follow Rogers' lead, with the result that it has been too narrow, that it has tended to train technicians rather than professional engineers. Today we are trying to catch up with Rogers. Our nation now asks of its engineers that they be more than technicians and narrow specialists, that they henceforth have a deeper grasp of the scientific principles and concepts fundamental to their understanding of nature and a broader foundation of liberal education embracing an understanding of man. It asks for more engineers who can, while achieving exceptional mastery of their specialty, avoid the easy, narrow rut of "excessive expertism" and go on to demonstrate *as engineers*, leadership in human affairs — the capacity to use and shape technology as a powerful instrument for enhancing the quality of our society and for contributing to the solution of the great human problems of our time.

As I have emphasized, Rogers believed that a truly professional education in science and technology required what he called a "large general cultivation." He wanted the humanities taught along with engineering and science. He anticipated the need of a new kind of institution, humanistic in purpose, with its center of gravity in the sciences instead of the classical studies, but with the humanities and social sciences fully represented and enthusiastically supported as full partners.

It was Rogers' hope that the polytechnic institute he envisaged would achieve breadth by "leading the thoughts of the practical student to those wider and

(Continued on page 126)

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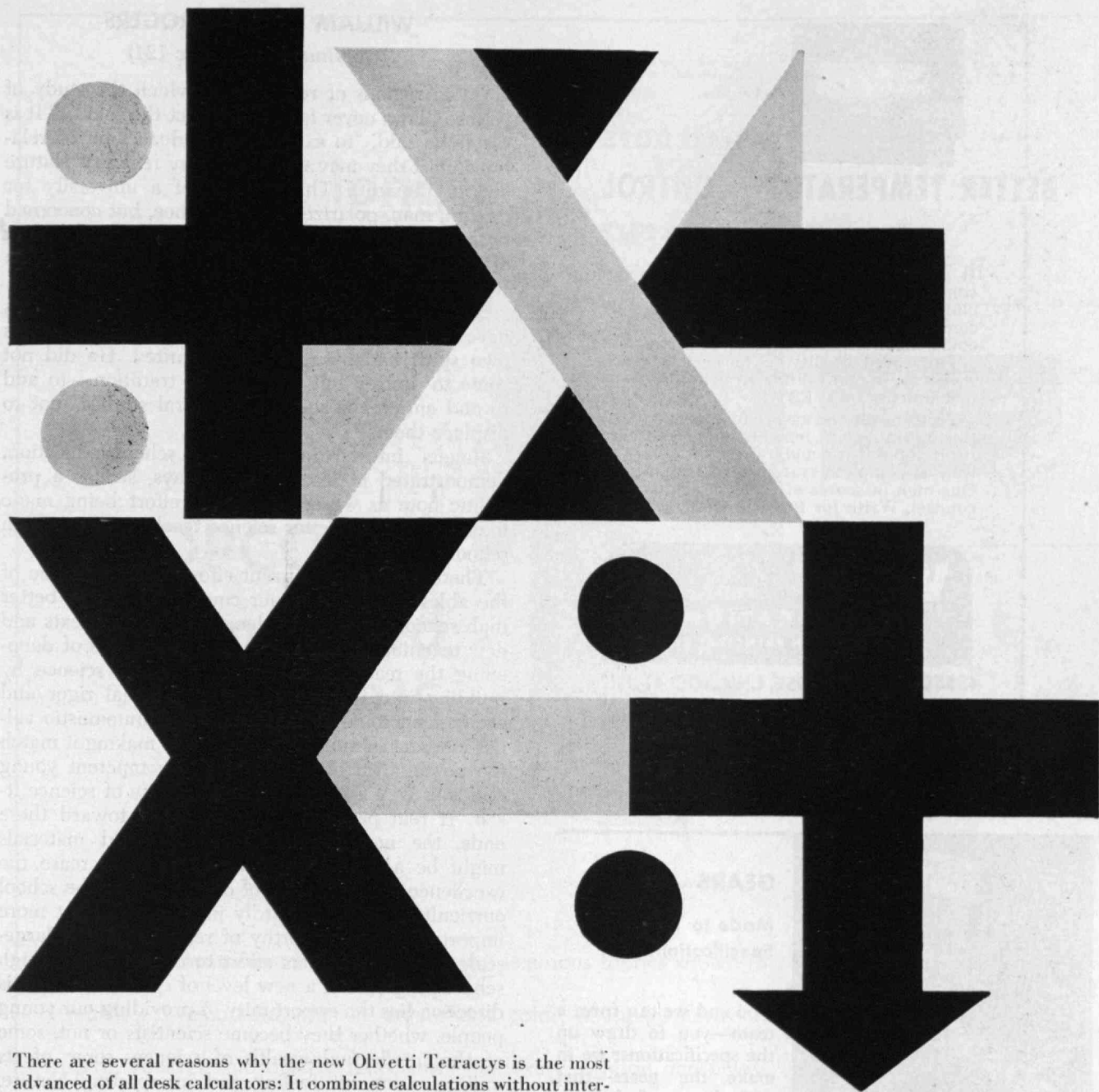
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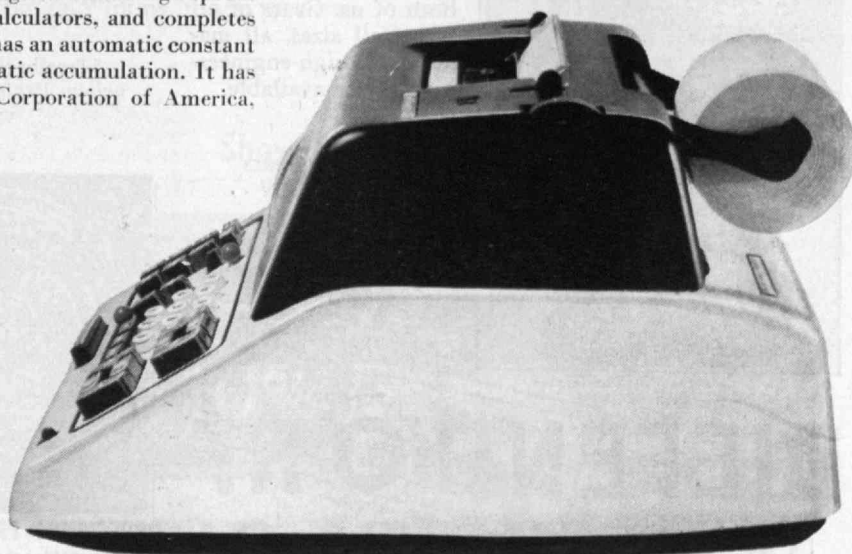
As of February 1957 — JOSEPH ACKERMAN, JR. • 1936 — Technical Director

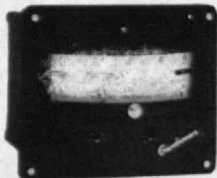
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WILLIAM BARTON ROGERS

(Continued from page 124)

elevated regions of reflection to which the study of Nature's laws never fails to conduct the mind." "It is easy," he said, "to extend the golden chain of relations until they may embrace every realm of Nature and of thought." This concept of a university for modern man, polarized about science, but concerned broadly with the welfare of society and of the dignity of man has come to be the aim of the institution Rogers founded.

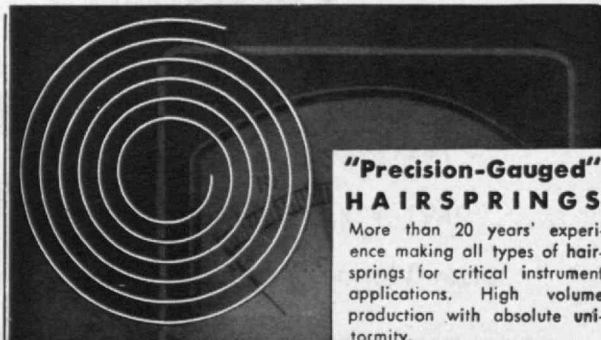
As another commentator has observed, "Rogers never broke with the cultural climate in which his own spirit had blossomed and fruited. He did not come to destroy but to fulfill the tradition—to add to and enrich the so-called 'cultural studies,' not to displace them."*

Rogers' interest in secondary school education, demonstrated in his Baltimore days, strikes a prophetic note as we see the great effort being made today to achieve better science teaching in our high schools.

There are several current efforts enlisting some of the ablest scientists in our country to design better high school courses, supplemented by new texts and new teaching aids. These hold the promise of deepening the teaching of secondary school science by building into it some of the intellectual rigor and excitement, some of the beauty and humanistic values inherent in modern science, thus making it match the potential of our intellectually competent young minds as well as the unfolding promise of science itself. If real progress could be made toward these ends, the new concepts, methods, and materials might be a pace-setting movement to increase the excellence and challenge of other parts of the school curriculum. One can hardly imagine an effort more important or more worthy of really bold and large-scale support than this effort to design special high school programs at a new level of excellence. In this direction lies the opportunity of providing our young people, whether they become scientists or not, some of the intellectual wealth of science, some of its unique vision for feeling and interpreting Nature, some of the understanding which our citizens should

(Continued on page 128)

*Treadwell Cleveland, "Technology Revisited," *The Technology Review*, 38-269 (April, 1936).



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WILLIAM BARTON ROGERS

(Continued from page 126)

have to deal more effectively with the great issues of our time arising out of science.

At the college level, we still have far to go to make science a meaningful part of our liberal arts education — which Rogers felt it ought to be, just as he believed that “a large general cultivation” should be the aim of scientific education.

If we are to survive as a nation, science most certainly will play an increasingly large part in our national life. A man cannot be really educated in a relevant way for the needs of our modern life unless he has an understanding of the values of science.

We are gravely concerned today about the shortage of scientists and engineers, as we should be. We see a hostile society making an unprecedented and successful effort to mobilize science and technology for the uses of an oligarchy that openly proclaims its intention of “beating us out,” both industrially and militarily.

However much we may perceive variations of strength in the fine structure of Soviet science, we must agree that they have achieved an over-all capability that can profoundly affect the balance of military and industrial power. We in the United States cannot lag or flag one minute in our scientific, technological, or educational effort if we are to avoid dropping back into a position of disadvantage. We need not only to strengthen our education in science and engineering. We need to give greater emphasis to basic research in relation to applied or development research.

There are certain things we should not do. We should not let ourselves be bemused by numbers. We should not engage in an academic numbers race with the Soviets. We should not copy their narrow, overspecialized education. We should not throw quality out the window in order to handle numbers; our shortage is one of quality as well as numbers, versatility and breadth as well as specialized competence.

We do need to move steadily forward in the great tradition of William Small and Jefferson and Rogers, whose mind was fired and shaped by their ideas.

(Concluded on page 130)

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WILLIAM BARTON ROGERS

(Concluded from page 128)

If we can continue to develop and enhance this broader view, this indigenous American view of science, we need not be bearish about American science and scientific education. We must dock any weaknesses which appear, fill in the gaps, draw forth their latencies of creativity and excellence, afford them the means to meet the rising requirements imposed by our increasingly complex industrial society and our immense responsibilities to deter war and strengthen the free world.

Especially must we cultivate the latent strength of our total education and give it the new capabilities to meet advancing requirements for skill and talent, to realize more fully than we do now the innate potential of our human resources. This is the time for another great surge, another enhancement of faith and commitments in education — in our kind of education, our kind of intellectual freedom, our kind of social mobility and opportunity through education. Our purpose should be, not the ignoble one of beating somebody out, but the fulfillment of wishes deep in the hearts of men — a greater nation, a stable peace, a better world.

Today we celebrate a great Virginian and a great concept, and in so doing, we throw new light on the potential we have in this marvelous country for shaping a great civilization in our own way. As we honor William Barton Rogers and the environment which enriched his mind and spirit, our faith in the vigor and high destiny of our professional and cultural life is rekindled.

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Robert E. Smith '41, Vice President



and the prophet replied:
*"It is well to give when asked, but it is
better to give unasked, through understanding."**

Gifts by Will

TO THE Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors'."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plan for the future may go awry. Hence the prophet's importuning, "— give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, *"it is well to give when asked, but it is better to give unasked, through understanding."*

A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

Director of Development
Massachusetts Institute of Technology

Cambridge 39,

Massachusetts

* "The Prophet" by Kahlil Gibran

ALUMNI AND OFFICERS IN THE NEWS

On the Escalator . . .

In addition to the 32 Alumni recorded on pages 100 and 101, other Alumni advanced to new posts include:

RALPH H. ROSS'17 as president of the trustees, Brightlook Hospital, Lyndonville, Vt. . . . EDWARD J. HEALY'23 as vice-president, construction, Kuljian Corporation, Philadelphia . . . ROBERT S. CHIDSEY'26 as town engineer, Simsbury, Conn.

EBEN B. HASKELL'26 as chairman of the Connecticut Industrial Development Council . . . THEODORE E. CASSELMAN, JR.'27 as chief chemical engineer, Stone and Webster Engineering Corporation . . . KENNETH G. GARSIDE'29 as acting general manager, National Cranberry Association.

MARTIN T. MEYER'32 as president, Melrose Park Improvement Association, Philadelphia . . . MAXWELL D. MILLARD'33 as assistant vice-president for sales, American Steel and Wire Division, United States Steel Corporation . . . RICHARD H. VALENTINE'33 as general manager, New Departure Division, General Motors Corporation.

JAMES E. ARCHER'34 as a director, U. S. Trademark Association . . . FRANK G. MARBLE'35 as general manager, Boonton Radio Corporation . . . C. DOUGLAS CAIRNS'36 as mayor, Burlington, Vt.

THOMAS P. NELLIGAN'36 as executive vice-president, Albert Schwill and Company, Chicago . . . FREDERICK A. PRAHL, JR.'36 as director of research and development, Compo Shoe Machinery Corporation . . . GEORGE W. COLEMAN'37 as director of research, Parker Manufacturing Company, Worcester, Mass.

LAWRENCE E. HOUGH'37 as assistant vice-president, Singer Manufacturing Company . . . JAMES D. MCLEAN'37 as a director, Hoffman Electronic Corporation . . . WARDEN N. HARTMAN, JR.'38 as general manager of New Product Coordination, Armstrong Cork Company.

MORTIMER A. SCHULTZ'39 as treasurer, American Nuclear Society . . . BERNARD G. E. STIFF'40 as manager, Atomic Power Department, United Shoe Machinery Corporation . . . EDWARD M. REDDING'42 as director of research, R. R. Donnelley and Sons, Chicago.

WILLIAM W. MASON'43 as controller, Froedtert Corporation, Milwaukee . . . GWYNN H. ROBINSON'43 as a director, Air Force Association . . . KEITH E. RUMBEL'43 as vice-president, Atlantic Research Corporation.

FREDERICK J. CAVANAUGH'44 as assistant to the president, Wyeth International, Ltd. . . . ROGER M. FREEMAN, JR.'44 as president of the trustees, Moses Brown School . . . JAMES S. CRAIG'46 as vice-president, Hotel Corporation of America.

BENJAMIN H. CISCHEL'47 as executive vice-president and general manager, Electronic Specialty Company . . . RICHARD R. HYDEMAN'47 as vice-president of manufacturing, Taylor Fibre Company, Norristown, Pa. . . . VICTOR H.

POMPER'48 as vice-president, Hermon Hosmer Scott, Inc.

RAYMOND F. ROGERS'48 as secretary, Polymer Corporation, Reading, Pa. . . . RALPH J. DEVIR, JR.'51 as vice-president, Conti and Donahue, Inc., Lynn, Mass.

On the Bookshelf . . .

In *Mathematics for Science and Engineering*, PHILIP L. ALGER'15 presents a complete revision of Charles P. Steinmetz' *Engineering Mathematics*. The book teaches the student or engineer to use mathematics effectively by explaining basic concepts simply and developing numerical formulas, calculations, and methods clearly. (New York: McGraw-Hill Book Company, Inc., 1956, 371 pages, \$6.95.)

Theory and methods appropriate to the realization and approximation problems are the subject of *Synthesis of Passive Networks* by ERNST A. GUILLEMIN'24 (New York: John Wiley and Sons, Inc., 1957, 759 pages, \$15.00.)

MANSON BENEDICT'32 and THOMAS H. PIGFORD'48 are co-authors of *Nuclear Chemical Engineering*. The authors have included information presented at the Geneva International Conference in 1955 as well as describing materials and processes in nuclear chemical technology. (New York: McGraw-Hill Book Co., Inc., 1957, 608 pages, \$9.50.)

Modern Pulp and Paper Making, revised and edited by JOHN B. CALKIN'32, gives the basic processes of pulp and paper making. More than a dozen authors helped to rewrite and bring up to date the book originally authored by George S. Witham, Sr. (New York: Reinhold Publishing Corp., 1957, 549 pages, about \$11.50.)

One of the essays in *Magnetohydrodynamics*, edited by Rolf K. M. Landshoff, is by FREDERICK B. HOYLE'32 and Walter M. Elsasser. They describe mechanisms that may explain the nature of the magnetic field of the earth and of certain stars. The entire book is a study of how magnetic fields and ionized gases influence each other. (Stanford, Calif.: Stanford University Press, 1957, 115 pages, \$4.00.)

In *Analytical Design of Linear Feedback Controls* GEORGE C. NEWTON, JR.'41, LEONARD A. GOULD'48, and JAMES F. KAISER'54G present analytical techniques for solving practical control problems through the use of simplified models and constraints. These techniques are based on integral-square and mean-square error criteria. The book is written for the practicing control systems engineer as well as for graduate students. (New York: John Wiley and Sons, Inc., 1957, 419 pages, \$12.00.)

Meredith's Science of Health, by WARREN H. SOUTHWORTH'44 and Arthur F. Davis, is a college textbook which treats the field of health as a unit and discusses personal health problems with emphasis on mental health. (New York: McGraw-

Hill Book Co., 1957, 492 pages, \$5.00.)

HENRY L. LEE, JR.'47, and Kris Neville are authors of *The Epoxy Resins: Their Applications and Technology*. The book presents a comprehensive guide to the new field of epoxy resins, covering the chemistry of their preparation and their applications in industry. (New York: McGraw-Hill Book Co., Inc., 1957, 305 pages, \$8.00.)

Professor of Modern Languages WILLIAM N. LOCKE's *Scientific French* contains a concise description of the structural elements of scientific and technical French. (New York: John Wiley and Sons, Inc., 1957, 112 pages, \$2.25.)

Obituary

EUGENE SHURTLEFF'88, October 13
ALBERT P. MATHEWS'92, September 21
NORWIN S. BEAN'94, September 25*
MRS. P. FRANK BONESTEELE'94, August 22*

HENRY E. WARREN'94, September 21*
HAROLD C. STEVENS'96, September 10
GEORGE F. STARBUCK'97, September 25*
JESSE W. SHUMAN'97, March 9*
GEORGE F. HILLER'98, August 23*
HARRINGTON MACK'98, August 2*
DAVID G. ABEEL'00, October 1, 1956*
JANE H. BARTLETT'00, August 3*
EDGAR B. CAHN'00, April 23*
ALBERT T. LEATHERBEE'00, November 13, 1956*

HAROLD L. MORGAN'00, August 2*
EDWARD F. RUSSELL'00, July 13*
ALICE V. WILSON'00, July 21*
HARRY A. WHITON'01, August 31*
RALPH B. YERXA'03, October 4
CARLL S. CHACE'04, January, 1956
FRANCIS E. DRAKE'05, August 5*
LEONARD H. FOLEY'05, July 26*
WARREN W. LOOMIS'05, May 23*
SAMUEL SHAPIRA'05, June 3*
HARRY J. GUERIN'05, December 18, 1956*

FRANK A. BROWNE'06, August 30*
RALPH R. PATCH'06, September 18*
WILLIAM C. KERR'08, July 15*
DUANE S. SLATER'09, May 5
CARLETON W. HUBBARD'09, May 16
WEYMER H. WAITT'10, September 13*
JOHN C. WOODRUFF'11, September 6
CARROLL C. DAVIS'14, August 10*
CHEE-SING HSIN'14, July 10*
WILLIAM E. ADAMS'17, August 20
MALCOLM C. BROCK'17, August 23*
DAVID M. BROWN'17, September 17*
JOHN J. MCCORMICK'17, July 1955*
HERMAN L. ROGERS'17, October 21
JOHN P. VAKHLIOTES'18, June 25
JAMES H. LAWSON'21, September 16*
MEADE A. SPENCER'21, October 7
JAMES E. KIERNAN'22, October 6
G. FRANCIS DI SOMMA'24 September*
CHARLES F. RAMSEYER'24, December 9, 1956*

ROBERT S. WERTHEIMER'24, May 19*
HUGH B. SNOW'29, June 18
IVER W. FALLSTROM'30, September 13*
RICHARD BERRY'40, October 27
DOUGLAS A. MCKEE'52, June 28

* Further information in Class Notes

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Cleveland

The annual fall stag party of the M.I.T. Alumni Association of Cleveland was held Wednesday, October 2, at the Leisy Brewing Company's ratskeller with approximately 40 attending. This was the kickoff meeting for the Cleveland Club's winter season. Featuring the host's product, a wonderful buffet supper, and enthusiastic participation from all present, this informal meeting spread a real feeling of friendship on which to build our future meetings.

The Christmas luncheon for students now at M.I.T. will be held on December 27. It will be patterned after last year's successful meeting which included cocktails, a buffet lunch, and a report by Club President S. Floyd Stewart'24 on club activities and a report by the students on the latest happenings at the Institute.

The Cleveland Club is proud to note that Charles H. Smith, Jr., has been re-nominated an alumni member of the M.I.T. Corporation Visiting Committee for the Division of Sponsored Research.—HEATH OLIVER'55, *Assistant Secretary*, 17619 Winslow Road, Shaker Heights, Ohio.

Fort Worth

The M.I.T. Club of Fort Worth, Texas, held its regular quarterly dinner meeting on Friday, September 20, 1957, at the Ridglea Country Club. Earl E. James of Oklahoma City brought a program of slides and commentary on his recent trip behind the Iron Curtain. An attorney, traveler, and lecturer, Mr. James was a member of the group of ranchers and stockmen who returned the prior visit of a delegation of Soviet agricultural experts a few years ago. His collection of color pictures is perhaps the largest to come out of Russia since the revolution. Of particular interest were his observations at Moscow University, which has been often compared to M.I.T.

The people were very friendly and well clothed although the clothing was drab in appearance. The housing conditions were generally very poor. The children appeared to be well fed, clothed, and happy. This is because the children receive the best of everything. They are even paid to go to school, and they all speak three languages fluently—Russian, German, and English. When asked why they learn English, they replied that it is to prepare them to hold high positions in foreign countries.

Mr. James was perhaps most impressed by the almost total absence of soil erosion throughout the whole country, by Kiev as the most modern and beautiful city visited, and by the Moscow subway. The subway was buried very deep, was very

modern and efficient for rapid travel to any point in the city, and was so elaborately and beautifully decorated that it is recognized as the show place of the city.

The next scheduled meeting will be held in December together with the Dallas M.I.T. Club.—L. M. HAILEY, Jr., '50, *Secretary-Treasurer*, 2801 Creston Avenue, Fort Worth 15, Texas.

Great Britain

H. E. Lobdell'17, Executive Vice-president of the M.I.T. Alumni Association, and A. H. Rodriguez'21, Review Secretary of the M.I.T. Club in Cuba, with their charming wives, dined with the Club on October 4. Lobby brought hot news of Tech and of fellow Alumni he had met in his lightning tour of Europe, including our brother in Luxembourg. Rodriguez told of the M.I.T. Club in Cuba and made everyone jealous of the 48 visiting Alumni who made the last reunion there. The dinner was held at the Imperial College of Science and Technology in London, which has close associations with Tech, and glasses were drained in a toast wishing success and prosperity to the Massachusetts Institute of Technology in her ever widening fields of science.—PETER V. DANCKWERTS'48, *Secretary-Treasurer*, Imperial College of Science and Technology, Prince Consort Road, London, S. W. 7.

Northern New Jersey

Dr. James R. Killian, Jr., '26, was greeted by the largest attendance of the M.I.T. Club of Northern New Jersey in nearly two years when he addressed the Club on September 30. About 125 Alumni attended this meeting, which was the opener of the 1957-58 season. Dr. Killian told of recent developments at M.I.T. and then turned his attention to scientific education and progress in the Soviet Union.

Dr. Killian was the first of a series of outstanding speakers who are to address the Club during the 1957-1958 season. Among other speakers will be Colonel John P. Stapp, the aeromedical officer who achieved prominence as a human guinea pig in rocket sled experiments.

Because the Northern New Jersey M.I.T. Alumni are scattered over a wide area, meetings are being held at different places in the area this season. The opening meeting was held at the Hotel Suburban in Summit. Other meeting places include Paramus and the Hotel Suburban in East Orange, which has been the traditional meeting location. The rotation of meeting locations is expected to make it possible for more men to attend meetings.

At the Second Alumni Officers' Conference held at M.I.T. on September 6 and 7, the Northern New Jersey Club was awarded a Bronze Beaver for a study prepared by two committees of the Board of Governors covering "The Factors Af-

fecting the Growth and Influence of an M.I.T. Club." These two committees, which were appointed by last year's president, Don Spitzli'27, were the Program Committee, consisting of C. D. Grover'22 (chairman), R. J. Ozol'36, G. C. Paulsen'40, and R. P. Westerhoff'27; and the Membership and Attendance Committee, consisting of A. D. Green'26 (chairman), J. F. Andrews'33, E. D. Callahan'48, and N. S. Foster'28.

These studies had as their objectives (1) to determine how the Club could be of greater service to Alumni in the New Jersey area and (2) to determine how Club membership could be brought more in line with the growth of alumni residents in the area. In the latter connection, an effort is being made to boost attendance by securing outstanding speakers and rotating the meeting place. The Club is also following up its meeting notices with personal contact of Alumni and is encouraging greater attendance and participation of younger Alumni.—LOUIS F. KREEK, JR., '48, *Assistant Secretary*, 82-B Woodland Road, Short Hills, N. J.

Rochester

The first meeting of our Club for the 1957-58 season was the annual outdoor steak roast held on September 21. The committee under the direction of Fred Kolb'38 did its usual fine job of preparation. A good hot day helped a good turnout of 55 members and added impetus to the consumption of beer, which approached a record for this affair. The usual baseball game between the "Odd" and "Even" classes ended in a close win for the Evens by the score of 10-8.

The serious part of the meeting included election of club officers for the coming year. Results of the election follow: Fred Kolb'38, President; R. E. Smith'33, President-elect; E. Philip Kron'34, Vice-president; John R. Flynn'50, Treasurer; J. K. Littwitz'42, Secretary; A. Mackintosh'44, Assistant Secretary; Charles C. Buik, 3rd, '45, Executive Committee member. In addition to elections, R. M. Wilson'30 reported on the Alumni Officers' Conference at Cambridge. A Bronze Beaver Award was presented to the Club at that conference in recognition for the success of our effort in the personal solicitation 1957 Alumni Fund drive.

Don Severance'38 came to Rochester in September and met with some of the club officers to discuss plans for a possible Alumni Regional Conference here either in the spring of 1958 or 1959. Activities of the Educational Council under the direction of Harry Essley'36 started with Professor Hoyt C. Hottel'24 of the Chemical Engineering Department spending a week with us in November visiting 15 area schools. A Parent-Student night was also held during Professor Hottel's visit.—J. K. LITTWITZ, *Secretary*, 191 Rogers Parkway, Rochester, N. Y.

Washington, D.C.

Attendance at the first event of the year, a dinner meeting at the Cosmos Club on September 26, was about 100. A seminar on "Financial Planning" was conducted by Ferris and Company. The seminar was followed up by additional sessions on October 3 and 10 at the National Housing Center auditorium.

The next meeting is scheduled for Wednesday, November 20, at the Cosmos Club. It will feature John T. Rule, Dean of Students at Tech, as after-dinner speaker. We are looking forward to another Christmas luncheon for M.I.T. students residing in the area. December 27 is the date for the luncheon, which will be held at the Army-Navy Club. Any students interested, please contact President Robert W. Blake at Jefferson 2-3929.

Plans are progressing for the first Washington regional area conference, which will take place early next year. A committee has been formed, consisting of: Thomas Meloy '17, chairman; Robert W. Blake '41, vice-chairman; Thornton Owen, Publicity chairman; Charles S. Butt, Jr., '41, Arrangements Committee chairman; Adolphe H. Wenzell '17, Financial Committee chairman; and Francis du Pont '17, Invitations Committee chairman. — CHES-TER N. HASERT '41, *Review Secretary*, 2475 Virginia Avenue, N.W., Washington 7, D.C.

CLASS NOTES

1891

When Tech men get together . . . This time it was for the Second Alumni Officers' Conference held in Cambridge on September 6 and 7, when nearly 350 Technology Alumni, all keenly at work for present welfare and the future growth of old M.I.T., were the guests of President Killian and the Corporation. Most of these men came from homes far removed from Cambridge. They stayed at Baker House, one of Tech's finest dormitories, and became intimately acquainted with one another. The program of lectures, exhibits, and demonstrations was tight and exacting. We heard from many of our top men. The Conference closed with a brilliant address from Vannevar Bush '16, chairman, M.I.T. Corporation, at the final luncheon on Saturday. The lovely fleet of boats on Charles River Basin, with an initial "T" and beneath it a number on every white sail, moving so gracefully over the water added a touch of beauty and serenity to the occasion. The chance for acquaintance and comradeship at each and every meal was simply stunning. Well, it was just perfect, and an experience long to be remembered. Your Secretary was honored by representing the Class of 1891 at this Conference. Harry Young, our president, expected to be present but temporary illness, unfortunately, prevented. Were I to characterize this sample body of Tech men, I should name it: This Great Fraternity of Learning and Achievement.

The following clipping from the *Lowell Sun*, July 12, came to the Secretary after

the copy for the notes of the November issue of the *Review* was in the mail. Walter B. Douglass, our exquisite and lovable classmate, is again brought to mind as the distinguished structural engineer in the Boston area. May we not forget! He died July 10, 1957: "Walter B. Douglass of High Street, this town (Dunstable), widely known engineer and steel man, died Wednesday, aged 86 years.

"Mr. Douglass, born in Lowell, was graduated from Massachusetts Institute of Technology in 1891 and for 40 years was president of the New England Structural Steel Company of Everett. This concern fabricated the steel in the construction of many of Boston's buildings, including the Custom House Tower and the Opera House. He resided for many years in Arlington and Belmont and was a former selectman of Arlington.

"He leaves his wife, Carrie S. Douglass; a sister, Miss Eleanor M. Churchill of Alton, N. H.; a daughter, Mrs. Prentiss French of San Francisco, Calif.; a step-daughter, Dr. Helen S. Hogg of Toronto, Canada; a son, Donald C. Douglass of Belmont; and a granddaughter, Miss Pamela French of Los Angeles, Calif." — WILLIAM CHANNING BROWN, *Secretary*, 15 Forest Avenue, Hastings-on-Hudson, N. Y.

1894

It is probably to be expected that the class notes of an octogenarian class should have to record both sad and pleasant items. So it is with much sorrow that the Secretary at this time must first pay homage to those who have recently passed from us, for our losses in recent months have been grievous.

On August 22 occurred the death of Mrs. P. Frank Bonesteel, at the Lakeside Nursing Home in Chicago, after an extended illness. As Sarah Abbie Hall, she was one of the three regular women students who entered and graduated with our Class. She was one of the first women to graduate in the Course in Physics, and had a fine mind as well as a very pleasing personality. From January, 1895, to June, 1900, she was a teacher of chemistry and physics in the Cambridge School for Girls and also worked as a computer at the Harvard Astronomical Observatory. In September, 1898, she married P. Frank Bonesteel, who was also a member of our Class as a special student in architecture. They later lived in Victor, N. Y., where her husband died in 1919 and she continued for some years to carry on the fruit farm on which they had lived. In recent years she had lived in Chicago, and when health failed had entered the nursing home where she died. She was a woman of brilliant attainments.

On September 21 came the saddening news of the death of one of our ablest classmates, Henry Ellis Warren of Ashland, Mass. Although he had not been in his usual buoyant health for several months, his death had come extremely suddenly as a result of a heart attack. The town flags were ordered at half staff in honor of this modest man who had brought fame and prosperity to the Ashland community during his 50 years of life there. Henry Warren was born in

Boston, May 21, 1872. At M.I.T. he studied electrical engineering; even while an undergraduate he began to study and conduct experimental work on a means for measuring temperature at distant points, which resulted in the invention of the thermophone, often used to determine the temperature of deep lakes. This was the first of more than 100 patented mechanical and electrical devices which came from his fertile brain.

From 1897 to 1902 he was engineer in charge of construction and operation of the Saginaw Valley Traction Co. in Michigan, where he gained experience in handling men and in large-scale management. Returning to Boston, he became engineer of the Lombard Governor Co. and developed many improvements. He eventually became president of the company, a position held until his death.

He converted one of the buildings on his farm in Ashland and began the development of electrically operated clocks, and in 1912 organized the Warren Clock Co. Not satisfied with the product, in 1916 he undertook the problem of utilizing commercial alternating current for the purpose of time keeping. This involved the invention of a new form of synchronous self-starting motor adaptable for use in clocks and of instruments for measuring frequency with great precision; and before the end of the year these necessities were invented and the Edison Illuminating Co. of Boston first adopted the use of the Warren Master Clock. Here was the genesis of a new public utility. It was this invention, which enabled power companies to keep an accurate check on alternating current frequencies, for which Warren is best known and which has probably had the widest impact on the world, although the millions of Telechron clocks are evidence of his inventive genius.

The name of his company was changed to the Warren Telechron Company, and in 1929 an interest in the company was acquired by General Electric. This interest later became the Clock and Timer Division of The General Electric Co. Warren retired as president of the Warren Telechron in 1943, after 17 years in that office, but he remained as consulting engineer. One of Warren's late inventions was the "robot astronomer," a device to be applied to telescopes tracking the movements of a particular star or area.

Warren, who was affectionately known as "Time," was prominent in many civic and public affairs. He was a selectman of Ashland for several years and interested in its schools. He was a director and presided at annual programs of the Wellesley College Institute of Social Progress; president of the Middlesex County Extension Service; active in Boy Scout leadership; and giver of \$10,000 as a scholarship fund for Algonquin Council. He was on the advisory committee of the Salvation Army and a trustee of the Framingham Union Hospital. Altogether, he was a man of good works.

But we in the Class loved him best for his warm friendship; his modesty; his humor; the thoughtfulness with which he gave photographs to all attending reunions; and the many ways in which he added to our pleasure at our five year reunions, at which he and his charming

wife were constant attendants. One might summarize by saying he was a perfect friend.

In 1907 Warren married Miss Edith B. Smith, who was his able and devoted helpmate for 50 years. To her the sincere and affectionate sympathy of the Class is extended.

Three days after Warren's demise, another grievous loss to the Class occurred through the death of Norwin S. Bean of Manchester, N.H., who succumbed to a somewhat long-standing heart ailment on September 25. Bean was born November 4, 1873, at Manchester and had his secondary education in Manchester public schools. Then as a member of '94 he came to M.I.T., where he took the Electrical Engineering Course. His long and useful career was, however, almost completely devoted to banking and industrial matters. Only two weeks before his death, the Secretary had received a card from Norwin stating that he was still suffering from a tired heart, and that Mrs. Bean was gradually convalescing from a fractured hip. From other sources it was learned that they had both been hospitalized at the same time but in different hospitals.

Thus has passed on another classmate whose magnetic personality and splendid loyalty had greatly endeared him to us all, and another who had taken high place in his chosen profession and in public esteem. In the class notes in the November, 1956, issue of *The Review* there was presented an account of the "Tribute" paid by his associates to him at the time of his retirement as the treasurer and chief executive officer of the Manchester Savings Bank, after 29 years of service. Although retired, he continued until his death as chairman of the Board of Directors. In the notes of the January issue of this calendar year there was presented a partial record of his many business and charitable services. It is only necessary to refer to this record to learn that we have now lost a classmate of outstanding ability, integrity, and of the highest standing in his community and in the banking field.

As Norwin and Elizabeth were always constant and beloved attendants at our reunions, it is certain that the deepest sympathy and affection of the Class would be extended to Mrs. Bean, both for her irreparable loss of a lifelong partner, and for herself because of her serious injury. May recovery be complete as soon as possible.

We may now turn to the more cheerful news of classmates still active and engaged in various ways, or living in pleasant retirement. A letter from Class President Horace Cray states: "I always enjoy reading the news of the old friends whom we see so seldom nowadays.

"I am still actively engaged in business — Pennsylvania Furnace and Iron Company, celebrating its 50th year of business this year. We are steel fabricators, manufacturing gas-fired heating equipment — furnaces and boilers and truck tanks, with distribution over a large part of the U.S. For many years we have manufactured tanks for hauling petroleum products and asphalt. A fairly new line for us is the stainless steel milk tanks equipped with

pumps and cooling devices that enable the milk hauler to go direct to the farms, test the milk, and pump it directly into the tanks for hauling to the processing plants. This does away with the old-fashioned milk cans, and has been of great advantage both from a health standpoint and financially. Our special tanks are for hauling liquid oxygen at a temperature of minus 295 degrees F.; liquid carbon dioxide carried at about 250 pounds pressure; and nitrous oxide used for medicinal purposes delivered to hospitals and drug companies, also carried at about 250 pounds pressure.

My civic interests for many years have been crippled children's clinics and hospitals, and a short time ago I was the recipient of the Benjamin Rush Award given each year by the Pennsylvania Medical Society to a layman for public health services. For the past 30 years I have been a member of the Board of Trustees of Zem Zem Shrine Hospital for Crippled Children in Erie, Pa.; and two years ago, while I was absent in South America, the boys made me chairman of the Board, which position I still hold.

"My chief hobby for many years has been golf — and I play at least nine holes nearly every day. Last month I was lucky enough to have my second hole-in-one. My wife and I both enjoy traveling and taking colored pictures. We have made several trips abroad, and have a fine collection of colored slides from out-of-the-way places by which we enjoy reliving our travels and sharing them with our friends.

"I was never blessed with any children of my own, but coming from a large family myself and with a large 'in-law' relation, there are now in two generations 85 persons who are privileged to call me 'Uncle Horace.' Needless to say we are never lonely or bored on Christmas and other holidays."

George Taylor writes after years of silence: "I was all prepared to join the 60th reunion in '54 when I was driven off in an ambulance for six weeks of administration of surgeon, doctor, nurses, followed by six months of enforced semi-idleness at home. Now, except for general handicap of advancing age, am better than ever. Because of loss of hearing it is useless for me to attend reunions, meetings, theatres, and so forth, hence my absence therefrom. Even so, as I have been doing for nearly half a century, I take the early train daily to Boston to continue the sale of machine tools in New England.

"Following a long decline in health, my wife died last October, after fully 56 years of our happy married life. Now under general direction of my daughter, Mrs. Roger W. Hardy who lives across the road from me, and the care of a housekeeper, I am pampered beyond my desserts. But what can a man do against the power of a woman?

"Returned a week ago from my third long and recent visit with my son (Good-year Atomic Corp.) and his wife in Waverly, Ohio; during one of these trips I made a brief visit with my granddaughter and her husband and my great grandson in Phoenix, Ariz. Hobbies, I may say, are nonexistent, unless an idle study of mathematics may be so called, and the

swinging of a sharp axe in my little wood plot. Had a glorious day yesterday, for example, felling a few dead and broken trees."

And here is a message from Arthur W. Tidd of 81 Lovell Road, Holden, Mass.: "Here is my story, such as it is. My wife came down with paralysis agitans (Parkinson's disease) in 1935, and in 1940 I retired from the chief engineer's office of the Board of Estimate of the city of New York. As my wife's illness developed rapidly, she soon became quite helpless and my job was cut out for me. She died last November. Fortunately, my own health remained excellent and unimpaired. We had been married over 50 years, all of which time was spent in White Plains, New York. In June of this year, I sold our White Plains home and purchased a little bungalow here in Holden, right across the street from my married daughter. Holden is only a few miles from Clinton and West Bolyston where I spent nearly 10 years after graduation on the construction of the Wachusett Reservoir. But, alas, only a handful of my friends and acquaintances of those early days are still alive. But I am New England born and bred, so it is like getting back home in a way and I like it. I am very happy here, am in excellent health and spirits, and probably shall be right here when my number comes up. I shall be 85 very soon. My principal hobby is the genealogy of the Tidd family, of which I am the 10th generation, all in New England. This hobby is a never ending one, and what with searching for new information and keeping up a brief correspondence, I never find the time hanging heavy on my hands. My two sons are with the Bell Laboratories, one an authority on communication and allied system in the Arctic, radar, Dew Line, White Alice Line, and so forth, the other in development and research and a contributor to the success of the transatlantic telephone circuits. The daughter is an efficient and energetic wife and homemaker, interested and helpful in civic affairs as well as keeping her eye on her father. As one of the neighbors said, 'He isn't an old man now, he just has been around for quite a long while.' And that's the story. I have written up my story in detail for publication in the records of the American Society of Civil Engineers, a copy of which will be sent to M.I.T. after my demise (which does not appear to be imminent, however) and I sincerely hope and trust that you will be there to receive it."

It is always a pleasure to hear from Edward M. Hunt, who, with his wife, was a constant attendant at five year reunions. They still live at 118 Eastern Promenade, Portland, Maine. Ned has sent a brief story of an interesting career.

"My present business address is 551 Congress Street, Portland, Maine, where I am associated with a building contractor and do a little estimating and keeping the office open when the others are out. I am very fortunate in having good health. My public services are all behind me. Eleven years as assistant engineer in the Department of Public Works, city of Portland. 10 years with Engineering Department, U. S. Army, on river and harbor improvements, coast of Maine and New

Hampshire. 27 years, city engineer and Commissioner of Public Works, Portland, Maine. Eight years as County Commissioner, county of Cumberland, Maine. No honors — do not travel much. I like to read stories and associate with the few friends that are left."

The secretary hopes to present further notes about our surviving members in the next issue. — SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge, Mass.

1896

The secretary is dependent upon the members of the Class for news; he is merely an editor, not a columnist. If the notes are to continue as of '96 it is quite essential that news be sent to him. The first paragraph of Leland's letter is especially commended to the attention of delinquents and the whole letter is an inspiration to all of us. "Dear Driscoll: Having received several reminders that I was one of those who have not responded to your request for class news and being thoroughly ashamed of my neglectful conduct, I will herewith attempt to make amends.

"After graduation I was employed until September of 1900 by the Navy Department, both in the Navy Yard in Charlestown and at the Union Iron Works in San Francisco. In September, 1900, I was instructor at M.I.T. and in 1905, assistant professor of naval architecture.

"In February of 1911 I came to San Francisco as mechanical engineer for a firm of waterfront contractors and had charge of designing the hydraulic dredge that filled the area where the World's Fair of 1915 was held. For the past 40 years I have been in business for myself installing and operating boiler plants throughout the area west of the Rocky Mountains, during which time I have been the California sales agent for the Erie City Iron Works of Erie, Pa.

"In the summer of 1939 I visited Alaska, partly on pleasure and partly to get data for an installation at Ladd Field, Fairbanks, where a boiler plant was shortly to be required. As an adjunct to that trip, and purely for fun, took a steamboat trip up the Yukon River to Dawson City and Whitehorse, a trip I had long desired. On the steamer was a clergyman, Father Partridge, but the name meant little until one day he said that he had attended school on Boylston Street in Boston; then I recalled that he was captain of my drill company. Strange that after all those years we should meet north of the Arctic Circle. It proved to be a very pleasant experience, we saw much of each other during the trip; and upon his return to San Francisco we had the pleasure of entertaining him in our home in Walnut Creek, a small town 20 miles east of Oakland, Calif.

"In the spring of 1920 I suffered a seizure of chronic glaucoma, the ultimate effect of which was reached in the fall of 1943 when the light failed completely, and I have been in darkness ever since.

"On March 13 of last year I turned over the responsibility for the active management of our company to my son, who now carries on while I remain as vice-president

of the company in an advisory capacity, being entirely too young and far too active to retire completely. Although comparatively inactive I find much to enjoy and shall shortly observe my 50th wedding anniversary.

"If any of the '96 boys show up in this neighborhood, I would be much pleased to see them. My last attendance at the class reunion was in Osterville in 1936, when I had the pleasure of meeting many of my fellow classmates; had hoped to make in again in '41 but there was so much defense work on hand that I could not get away and the war that followed made in impossible for a number of years; now, it seems a bit too late.

"I particularly wish to send my regards to Eddie Bragg, Joe Clary, and Harold DeLong who, with myself, appear to be the only survivors of Course XIII; especially to Paul Litchfield, as we used to sleep side by side during the physics lectures, often arousing only at the applause that followed Charlie Cross's jokes. Very best regards; Walter S. Leland."

While writing these notes I had a telephone call from John Rockwell who said Charlie Hyde called on him yesterday. He says Hyde looks about 60 years old and has many interests. The Doctor was out for a ride last week; he says Fred Damon gets around to see him twice a week. — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline 46, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline 46, Mass.

1897

Undoubtedly the marriage of William C. Ewing and Florence Wood, both members of the class of '97, was unique in our history. We are indebted to Mrs. Ewing for the following communication which contains so much of interest to all M.I.T. personnel: "Your letter of invitation to write to the Class reunion has persuaded me to make the attempt though I cannot write as easily as in former years. I feel that I am a stranger to you since I spent only the senior year with you. I entered with the Class of 1895 but on Mrs. Richard's advice I stayed out for a while to rest and get some experience in teaching. I was the 40th woman to graduate from M.I.T. and happened to be the only one in 1897. I taught mathematics at Wellesley and Wheaton and in 1899 married William C. Ewing '97, VI. We lived in Boston until the first world war when William was in the Shipping Board in Washington. After the war his varied interests took us to Cincinnati, Philadelphia, and Williamsburg. The last 10 years of his life he spent most happily in conducting a small bookshop on Duke of Gloucester Street here in Williamsburg. He died of a cerebral hemorrhage in 1947. Our son graduated from the College of William and Mary, then took his Ph.D. in chemistry at the University of Chicago. He is now a professor of chemistry at Union College in Schenectady, N.Y. I have three grandsons.

"This is the 350th anniversary of the founding of Jamestown and much is going on in way of celebration. The first special event at the College was the day in commemoration of William Barton Rogers

upon the occasion of the 75th anniversary of his death on May 30, 1882. It was held on May 11 at three o'clock in the afternoon. It was to have been held in the old College Yard in front of the Wren Building, but cloud and rain prevented and we met in the new beautiful Phi Beta Kappa Memorial Hall. President Killian was here to receive the degree of L.L.D., and to make the principal address. There was a full academic procession led by the college choir, always an impressive sight. President Killian's address was on the life of Rogers and the founding of the Institute. I enclose a copy of the citation made by President Chandler. President Killian was the third president of M.I.T. to receive an L.L.D. from William and Mary College: Rogers in 1859 and President Compton in 1947. I was present on that occasion and had the opportunity to speak with him.

"This was followed by a reception when I had the pleasure of meeting President and Mrs. Killian. He was much interested in seeing William's Class cane, which I had taken with me, saying, 'I never saw one of those.' Do you all remember the Class canes with a silver plate over the end of the curved handle, with an embossed M.I.T. and the name engraved above?

"There had been a reception at the Inn the evening before given by the Technology Club of Virginia. I cannot tell you how many were there for I do not go out evenings now that I have lost my escort.

"I hope you will have an enjoyable holiday for your 60th reunion. Good wishes to you all," signed Florence Wood (Mrs. William C.) Ewing, VIII, 129 Chandler Court, Williamsburg, Va.

Additional replies to the invitation of the Class for our 60th reunion on June 11 at M.I.T. Endicott House were as follows: "Sorry I cannot accept your invitation," Proctor L. Dougherty, 3723 Jenifer Street N. W., Washington, D.C. "I will be unable to attend. I wish I could go but I can't do as much as I could even a few weeks ago. I am in the Henry Ford Hospital for over a week but I don't get back easily. I know Dedham but not the beautiful house which I would love to see. My best wishes to everyone," Helen E. Keep, Hotel Tuller, Detroit, Mich. "Thanks for the invitation," Reverend Harry S. Mabie, 2111 Harrison Avenue, Cincinnati, Ohio.

"Sorry not to visit the charming Endicott House. All good wishes," Mary Howell (Mrs. Joseph A.) Wells, 50 Watchung Avenue, Upper Montclair, N.J. "I very much appreciate your gracious invitation," John J. McSorley, 200 Country Club Drive, Greensboro, N.C.

The following notice appeared in Civil Engineering, June, 1957 issue: "Jesse Wyman Shuman, age 82, secretary-treasurer of the Power Engineering Company, Minneapolis, Minn., from 1904 until his retirement, died recently. Earlier in his career Mr. Shuman was connected with the Edwin P. Allis Company as local manager of their branch office in Minneapolis. He received a B.S. degree from Massachusetts Institute of Technology. Mr. Shuman was the author of numerous papers in *American Society of Civil Engineers Transactions* and other technical journals."

Exhibited at our 60th reunion was a

copy of the April issue of *Gasco News* (Columbia Gas System) describing a heavy truck designed and built by Tom Weymouth in 1906 for National Transit Company, Oil City, Pa. We quote from the article: "Thomas R. Weymouth is known throughout the gas industry for his 'Weymouth Formula' for determining the amount of gas flowing through a pipeline. He also pioneered in the invention and development of the orifice meter for large-scale measurement of gas. Some 15 years ago he retired from the old Columbia Gas and Electric Corporation after having been vice-president in charge of operations. But before that—some 35 years before—he had been an aspiring young engineer with the National Transit Company of Oil City. One of the many enterprises in which National Transit was engaged was the construction of gas compressor stations.

"As everyone in the gas industry knows, compressor stations are made up of mammoth pieces of machinery and equipment. And if you have a nodding acquaintance with the transportation industry, you know that automobile and trucking were literally in the crawling stage around the turn of the century. National Transit's problem was to get its machinery out of the factories on trucks. But the 'horsepower' of that era's trucks was determined by the number of horses that pulled them. A horse-drawn cart couldn't begin to accommodate the great weight of the machinery the National Transit wanted delivered.

"It was into this dilemma that young Mr. Weymouth stepped with a plan for a truck that would transport 12 tons—an unhead-of load in those days. So convinced was Mr. Weymouth that the truck could be built that the company handed him a shop and some helpers and told him to go to work. There were a lot of problems. In 1906, automotive designs weren't standardized as they are today—especially truck designs. . . . In spite of this, the design was completed in a year, and Mr. Weymouth now has the satisfaction of noting that features incorporated in many contemporary vehicles—with some refinements—follow basically the same lines that he envisioned.

"One 'first' that he is quite certain he can claim is the disk wheel, which later came into great favor. At that time, spokes were the only thing. No rubber company would contract to build tires big enough for the load requirements, so Mr. Weymouth had to use broad steel tread tires with cleats for the rear wheels—attached at a slant, for 'smooth' riding over hard surfaced roads. The front wheels had high crowns to make turning easier. Another feature built into the 1907 model and still evident on many heavy vehicles today was a drum and cable, by which the driver can pull his truck out of a ditch under its own power. . . .

"A warm, friendly man whose alert mind belies his advanced years, Mr. Weymouth springs around his Manhattan apartment in a manner that clearly says he is much too busy to think of being bored in retirement. And now and then, as he sits in his comfortable littered den, surrounded by professional-like oil paintings, he still looks back fondly on the days of the great Oil City truck project."

The Alumni Association has notified us of the death on September 25 of George Franklin Starbuck, 141 Weston Street, Waltham, Mass., who graduated in Course II. Until retired, he had been with the Boston and Maine Railroad.

Greetings for the holiday season, a Merry Christmastide, and best wishes for 1958.—JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1898

Further letters have been received from classmates concerning Arthur Blanchard and his career. Writes Jack Bleeker, 221 W. Virginia Avenue, West Chester, Pa.; "Thank you for sending me the pamphlet giving an account of the life of A. A. Blanchard. It is too bad that valuable citizens like that have to go but it is wonderful to have been able to do so much good and leave behind such a splendid record."

Maurice F. Delano, Blakely Road, Havertown, Pa., writes: "Many thanks for the memorial brochure of Arthur Blanchard which came this noon. I have read every word in it, including the long list of his books, or booklets, that were published. All Greek to me. But wonderful to know a classmate mastered and published his findings that would help all mankind. I probably saw more of Arthur during our 20th reunion (really the 21st) at Lake Placid Club than at any other one time. I well remember the courage he showed when forced to hobble around with a cane at our 50th. Have often wondered if any other class at M.I.T. ever produced as large a percentage of men who really accomplished worthwhile things in this world, and who stood so near the top in their chosen professions, as did the Class of '98."

From our poet, Arthur I. Franklin, 2011 W. Talbot Avenue, Indianapolis 2, Ind., we received the following: "Thank you very much for that fine brochure on Arthur Blanchard. I knew him from our high school days in Newton. He and my brother (Duncan R., '02) passed on within a week of each other."

From Lewis J. Seidensticker, Montreal, Canada, the following: "The tribute to the memory of Arthur Blanchard is one to be valued and I greatly appreciate having it; but in the larger sense there is no medium adequate to convey his outstanding lovable character. We who have known him have memories to be cherished."

From far away Greece, Gorham P. S'evens writes: "It was kind of you to send me the notice of Arthur Blanchard's death. The article is well written. He was a credit to M.I.T. and to the Class of '98. And how I would have liked to have seen him as a policeman in Boston's Chinatown in 1919!"

We have been promising for some time to include in the notes various articles concerning classmates who have passed on during the past year. Through the courtesy of the executors of the will of Charles W. Pendell, we have received the following notice from the *Chicago News* of April 19, 1957: "Charles W. Pendell, a pioneer electrical engineer, died Friday in the West Suburban hospital in Oak Park at the age of 80. He helped design the Santa Fe railroad's first electrical signal system

after his graduation from the Massachusetts Institute of Technology in 1898. He was retired treasurer and director of the Electrical Engineers Equipment Co., 1502 N. 25th St., Melrose Park. A son and a daughter survive."

Through the courtesy of Maud P. Horton (Mrs. Ralph T. Horton) we have received the following more extensive description of the life and career of her husband, published in the *Watertown Daily Times*, Watertown, N. Y., of April 26, 1957: "Ralph T. Horton Succumbs at 81. Retired New York Central Engineer was Former City Resident. New Hartford, N. Y., April 26—Ralph T. Horton, 81, of 13 Pearl Street, former Watertown resident and retired engineer of the New York Central, died Wednesday night in a Utica hospital after a short illness. Mr. Horton was born in Foxboro, Mass., on February 29, 1876, the son of Edgar and Clementine Clark Horton. He received his grade and high school education there. He entered the Massachusetts Institute of Technology and graduated in 1898. Following his college graduation, Mr. Horton entered the service of the New York Central railroad on July 26, 1898, as chairman in the engineering department in Watertown. . . . On October 27, 1902, he was promoted to assistant engineer of the eastern division of the New York Central with headquarters in New York and Albany. On January 15, 1914, he was transferred to Utica as resident engineer in charge of the layout of the new station and terminal under construction at that time. . . . Mr. Horton married Maud Parker of Watertown at the First Baptist church in Watertown on June 30, 1905. . . . The couple celebrated their 50th wedding anniversary on June 30, 1955. In January, 1915, Mr. Horton was transferred from Utica to the valuation department with headquarters in the Grand Central Terminal, New York. He remained there until 1933 when he returned to Utica as accounting engineer. At that time he and Mrs. Horton purchased a home at New Hartford and have lived there ever since. On March 1, 1946, Mr. Horton retired from the New York Central after 47 and a half years of service. His fellow employees in the engineering section of the departmental accounting office gave him a testimonial dinner. After his retirement, Mr. Horton spent much of his leisure time at his two favorite hobbies of gardening and fishing. Mr. Horton was a member of the New Hartford Methodist church and financial secretary of the men's club of that church."

Through the courtesy of the Alumni Office we have received the following notice from the *Free Press*, Burlington, Vt., under date of September 4, 1957: "David Blossom died in Anna Maria, Fla. A graduate of Middlebury College in 1896, he was born in Pawlet, prepared for college in Granville, N.Y., and after four years at Middlebury, attended the Massachusetts Institute of Technology. He was with the U. S. Government employed as computer and draftsman in the U. S. Surveyor General's Office, Salt Lake City, from 1897 to 1903. He was engineer for the American Falls Canal and Power Co. at Aberdeen, Idaho; irrigation engineer at Kings Hill, Idaho; city engineer in Salt

Lake City; and general manager of American Falls Canal Securities Co. He leaves his wife, Florence Snevely Blossom of Anna Maria."

Also through the courtesy of the Alumni Office we have received the following clipping concerning George Hiller, as published in the *Providence Journal*, R.I., of August 26, 1957: "George F. Miller, Ex-Barrington Official Dies on Canadian Visit. George F. Hiller, 82, of 36 Walnut Road, Barrington, former chairman of the board of tax assessors, died Friday in Toronto, Canada, it was learned yesterday. Mr. Hiller was a retired insurance agent, having operated his own business in the Old Colony Building in Providence for many years. He was a member of the board of tax assessors for more than 10 years. . . . Mr. Hiller was a member of the First Baptist Church of Providence and served on many church committees. Survivors in addition to his wife are two sons, Albert Littlefield Hiller of Providence and John Stockwell Hiller of Glastonbury, Conn."

We have also received news of the passing of Harrington Mack on August 2, 1957, at the age of 83, and trust presently to have more information.

From these passings and those others described in the class notes and class letters of 1957, it might seem that the good old Class was about to disappear; however, consulting the Roster of the Class of '98, M.I.T., as of January 1, 1957, and subtracting those who have passed on, as far as known, up to October 1957, the present moment of drafting these notes, you will discover that there remain a total of 98!

This being the last issue of the Technology Review prior to the holidays, we will take this opportunity to wish all the sturdy boys and girls of '98 and their families and descendants a Very Merry Christmas and a Very Happy New Year. — EDWARD S. CHAPIN, *Secretary*, The Eliot, 370 Commonwealth Avenue, Boston 15, Mass.

1899

The trek to the southland is here. Ed Packard is at Gulfport, Florida; Ralph Pinkham is at Fort Lauderdale in that state; and your Secretary, long before this item reaches your eyes, expects to be at Reddington Beach, Saint Petersburg.

Jacob Stone underwent an eye operation in the early spring but now reports a much improved eyesight.

In about a year and a half our class will have been graduated 60 years. This calls for appropriate recognition of the fact, and plans for a reunion at that time. Any suggestions? — BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass. MILES S. RICHMOND, *Assistant Secretary*, South of Commons, Little Compton, R.I.

1900

Our annual reunion last June was very much of the same pattern as those of the last few years. We met in Cambridge for the Alumni Day festivities on Monday morning. Present at the luncheon were: Fitch, Newhall and wife, Charlie Smith

and wife, Stearns, Walworth, Ziegler, and the Secretary. We were able to get seats together at the table, and so the occasion was very enjoyable. The other features of Alumni Day were attended during the afternoon and the usual banquet in the evening.

On Tuesday we journeyed to Cotuit for our two days at The Pines. Attending were: George Atwood and wife, Stan Fitch and daughter, Alek Newhall and wife, Bill Hart and wife, the Secretary and his wife, Mrs. Bowditch, Mrs. Lawley, and for a short visit Geta and Lydia Crowell. Having such a small gathering we could be accommodated in the beautiful Evergreen home. This year we even had our meals served there, as the hotel was not yet open. Needless to say we had a most enjoyable time with no set program but spending our time renewing acquaintances. We left on Thursday morning determined to repeat the reunion next year.

Albert T. Leatherbee is reported to have died in November, 1956. He was with us one year and then left to go into business. David G. Abeel, who graduated with us from Course I, died October 1, 1956. We have no knowledge of him after graduation except that he lived in Catskill, N. Y. Edgar B. Cahn, who was with us two or three years, died April 23, 1957. He also never informed us of his later activities. In August your Secretary represented the Class at the funeral of Jane Bartlett at her home in West Bridgewater, Mass. The following is taken from the *Boston Herald*: "A leader in community and historical groups, she was the last direct descendant of the Bartlett family which settled (in West Bridgewater) in 1737. She resided in the same home in which her father, grandfather, and great-grandfather had lived. Following (her attendance at) M.I.T., she was a chemist for the American Glue Company in Boston and later moved to Washington, D. C., where she operated a gift and art shop for many years. Miss Bartlett was a trustee of the West Bridgewater Public Library, a member of the Bridge-water Historical Society, and a member of the Mayflower Society and the Women's Alliance of the Unitarian Church. While in Washington she was international vice-president of the Zonta District and a charter member of the Zonta Club in the nation's capital. She was also a member of the Women's University Club in Washington and auditor and nominating committee chairman of the Deborah Sampson Chapter, Daughters of the American Revolution."

Another of the ladies of the Class, Alice V. Wilson, died July 21. Her brother writes: ". . . a brief sketch of my sister, who was graduated from M.I.T. in 1900. Immediately after graduation she taught science in the Lenoir, North Carolina and Wilmington, N. C. public schools. From 1905 on she taught science courses at Greensboro College, Greensboro, N. C.; at Winthrop College, Rock Hill, S. C.; and at the East Carolina College, Greenville, N. C., until her retirement in 1940. She taught in the summer school at the University of North Carolina for two or three years and was a resident of Chapel Hill and Durham for most of the remainder of her life."

Harold Morgan passed away August 2.

We noted in the April Review notes that he had become so feeble that he and Mrs. Morgan had gone into a nursing home in Norwalk, Conn. He became bedridden in the spring of 1948 as the result of an operation. We have heard from him several times since then. Although unable to do much if any walking all these years, he has always written in a most cheerful way and has been much interested in any class news. We shall miss his letters.

Edward F. Russell, who was affiliated with the Class of 1900, died July 13, 1957. Before his retirement he had been superintendent for the Heinze Electric Company of Lowell, Mass.

We are happy to be able to close these notes with a brief account of a well-known member who is, as far as we know, still living, but of whom we have heard very little. Quoting the Cincinnati, Ohio, *Enquirer*: "Walter L. Rapp may not be Cincinnati's most active architect but he is one of the most congenial. And he speaks with authority when it comes to discussing architecture of yesterday. He as been 'at it' for some 57 years. . . . Graduated in 1900 from M.I.T., Mr. Rapp started his career with his father, George W. Rapp. . . . Rapp points with pride to his many works. A few include the Krohn Conservatory in Eden Park, Lincoln National Bank, and several buildings for the Fifth Third Union Trust Co. His industrial achievements include plants of the R. K. LeBlond Machine Tool Co., original buildings of the Cincinnati Milling Machine Co., Trailmobile Co., and the Lodge and Shipley Co. Among residential contracts were homes of R. K. LeBlond, Frederick V. Geier, and Dr. William Semple." — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

1901

I have just received a clipping from the Alumni office telling of the death of Harry Whiton, IV, at his home in Brentwood, Md., on Saturday, August 31. He served with the old office of the Supervising Architect of the Treasury in Washington, D.C., and later with the Public Buildings Administration from 1906 until 1941 when he retired. He was an active member of the first Congregational Church of Washington for more than 50 years. He is survived by his wife, a daughter, three sons and eight grandchildren.

I quote from a few replies received last spring. Bill Farnham, VI, reports: "I have been holding this in the hope that something of interest might turn up which I could report. Nothing has. My health continues to be very good and I enjoy my retirement — about 20 years now. My savings and pension enable me to have a steak whenever the stomach says do so. What more can you ask for as you cannot enjoy two steaks at the same time? I did enjoy our 55th reunion. My entire working years were spent with the Bell System, some 38 very happy years they were."

John Boyle, III, from Washington, D.C. writes: "Attended the installation and conferring of the doctor of laws degree at Williamsburg, Va., on President Killian. A fine and colorful ceremonial. As for myself, still engaged in active practice of patent law. Limit, five to six hours a day.

Take frequent vacations, two to three weeks. Favorite spot for the past 10 years, Key West, Fla. Two trips there last winter. Wonderful swimming. Doctors would starve if they had many patients like me. To live is to function and that's what I'm trying to do." — THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N.H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm Street, Cohasset, Mass.

1902

Our classmate, Lydia Weld, writes as follows to Dan Patch — "I would like to read in the Technology Review what my classmates have been doing since we left Tech so, as I said I would, I am enclosing an account of what I have been doing — for what it is worth.

"After Commencement in 1903 I went to California for the summer with my brother's family. By September I wanted to go to work. I had a standing offer of a job at Fore River, and one from Newport News at much less pay. But Fore River was too near the family and I liked the Newport News firm better. The job sounded more interesting. I have always felt that getting with a good firm was more important than starting pay. The Navy Department required a set of finished plans of all machinery on the ships — as installed, requiring a lot of tracing and checking on the ships. The Yard had to set up a new department and put me in charge. There were five charge men under the chief draftsman, Engine Division. I was the least of the five.

"The Newport News men were fine to work for. As charge man I was told what was expected and it was up to me to get it done to the satisfaction of the Navy Department's Inspector of Machinery and of our chief draftsman. We took on five women as tracers (the first women to be employed in the Engine Department besides me) and men to check on board ship as needed. It was often easier for me to go on board myself to check some last minute alteration. I had only been there a week, a battleship was just leaving and I had to know if pawls had been installed in the ammunition hoist covers to insure their staying open (as requested by the ordnance officer) instead of trusting to the heavy spring hinges, as installed originally. So, I took myself down on board. The ship was a madhouse — workmen finishing last minute jobs, Navy men trying to get their stuff stowed. I had never been on a battleship, much less one just going into commission, or seen an ammunition hoist — but I had blueprints. One hoist I couldn't find, so when I saw a man I had seen in the drafting room I asked him where I should look. He told me, but proved to be quite wrong. I found it later. I checked my pawls and went back to the office. Later in the day the office boy came in with the mail, much amused over something. 'Were you on the ship this morning?' he asked. I said 'Yes.' 'Well, you certainly shocked Brown,' he said. 'He stormed into the chief's office saying, 'was just down on the ship and was astonished to see that girl there. You oughtn't to let her on the ship. She asked me something and I was so surprised I don't know what I said. She must think I am a fool!'

"Now that I have time to think about it, I wonder if the chief draftsman knew what I did. He was a busy man, a new department, no pattern to follow — so I did what seemed easiest and best to me as a matter of course, the only woman to go into the yard and around the ships. I had a passkey and never knew what I would find when I opened a door to check some last minute change — a painter asleep on a bunk, or a dozen big wharf rats hunting crumbs. Looking back on it, I certainly would like a photograph of myself — skirts to my ankles, magenta candle in hand, blueprint under my arm, going down inside the uptake by the grab-rods to get to the top of a boiler. On one occasion I opened a door to the top of a boiler to interrupt a dice game. The negro workmen were unfailingly anxious to help, holding their candles so I could see what I was looking for. I might say that the Yard bought magenta candles by the carload. No flashlights then.

"After World War I broke things were strenuous. Wilson talked of 'watchful waiting.' There was no waiting at the shipyards. Our president, Mr. Hopkins, had been drowned when the *Lusitania* was sunk while he was on his way to Britain to confer with the Admiralty. German raiders came in to be interned, false funnels and superstructure disguising their profiles, their crews down with scurvy.

"The patriotism of my department was never questioned. One of the women was a granddaughter of the signer of the Declaration of Independence. Another's grandfather had been a member of the House of Burgesses. All were of old Virginia families. They were conscientious workers, faster than the men, and our department recorded confidential information sent down by messenger from Washington.

"I had a good time at Newport News. The head of another department and I exchanged. He took care of my work when I went to Italy, I of his when he went to England. In 1904 I represented the Board of Lady Managers of the St. Louis Exposition, first on a group jury and then on the department jury of the Transportation Department, along with the general managers of the Southern Pacific and Santa Fe, the director of railroads of Germany, the attache for the German legation, president of the Chamber of Commerce of Tokyo, and a dozen others that I have forgotten. Another Tech man represented the Board of Men Managers of the Exposition.

"However, World War I stopped all that. As time was the essence of the contract, it was full speed ahead from 1917. By December, 1917, I had worked myself ill. It was a terrible winter and I came down with quincy sore throat and tonsillitis. The doctor would go to his office at 7:30 so I could get my ears blown out and get to work on time. However, I stayed to finish a battleship. It would have been a mean trick to leave a ship almost finished. Two people took over my work.

"In January, 1918, after a stay in a hospital near my sister's in Connecticut, I went West and began ranching in Antelope Valley, eighty miles from Los Angeles. We took 320 acres of sagebrush and put down two 16 inch wells with 40 horsepower motors for irrigation and,

with the aid of an experienced foreman, developed a good alfalfa ranch.

"I had been west four months when I was asked to go to San Francisco to help set up the Offices of the Emergency Fleet Corporation on the West Coast. They found they could not run things from Washington. Ships were being built in Seattle, the engines in Los Angeles. Orders from Washington were to send engines to Seattle by sea; but there were no cranes at Los Angeles harbor large enough to lift the engines, and no ships large enough to carry the engines came into Los Angeles. After two months in San Francisco I went back to the ranch.

"I have a one-track mind — when I am shipbuilding, I am shipbuilding. When I am ranching, I'm ranching. I ranched for 15 years — 1918 to 1933 — and exhibited ranch products at various fairs. I have 204 ribbons won on fruit, grain, poultry and animals; and, I might add with pardonable pride, purple and blue ribbons predominate with many other special prizes also. During these ranching days I was director of the Los Angeles County Farm Bureau for Antelope Valley and president of the School Board of the Antelope Valley Joint Union High School. The school district was as large as half the state of Massachusetts. We brought the children to school in buses, attendance was compulsory, some riding 80 miles a day. I helped with the 4-H Clubs; was president of the Lancaster Women's Club. My only contact with engineering was through the American Society of Mechanical Engineers. Professor Miller of M.I.T. put up my name in 1915. I used to go to an occasional meeting at Cal-Tech. At one meeting, a dinner, when they were demonstrating new machines, there were 90 men and myself. The Hoover Dam was being built and I often went to see it. After 15 years an opportunity came to sell the ranch and retire to Carmel, where I had already bought land overlooking the Pacific Ocean. Here in Carmel I became active in civic affairs — member of the Advisory Committee to the County Zoning Commission, member of the League of Women Voters, etc.

Then World War II was on us. After Pearl Harbor I joined the Ground Observer Corps. During the winter of 1942 things were looking very bad for us. Nearly one hundred ships a month were being sunk. I began to think about getting back to ships, so when Stanford University announced a refresher course in engineering was to be started I sent for application blanks. — 'Application refused. This course would be a waste of your time. Too elementary.' But opposition has always made me more determined. University of California was giving a course in airplane designing and I knew this would not be 'too elementary,' so I went to Berkeley and saw the man in charge. He handed me an examination paper — half drafting, half mathematics through trigonometry. Considering that I had nothing to do with math or engineering for 24 years, I did pretty well, 48 answers correct out of 52. The instructor was much impressed and asked why, since I had had so much experience in shipbuilding, I did not stick with it. He gave me a card to Moore's Drydock Company, which was

building ships for the Navy and Maritime Commission. By night I had a job, senior draftsman, Engineering Division, Moore's Drydock Company, Oakland.

"It was very interesting to see the changes since 1918, principally in welding and new materials. When it came to pay the chief said I would be in the high bracket, but I said it had been so long I didn't know if I could do the work; that I would start at the same rate as the others and — a raise was always pleasant. Some weeks later he came to my drawing-board and wrote 10 cents and 50 cents. Pointing to the 10 cent figure, he said 'You will get this anyway, and the other — if you ask for it. I can't volunteer it because you would be getting more than the men and they will object.' I told him I certainly hadn't come up to cause any trouble with the men and started saying 'eeny-meeny-miny-mo.' I knew it would come out on the 10 cents. The chief began to laugh 'til everyone around us was looking at him. I might say I got the higher rate a few weeks later.

"After the Navy work was finished some of us were asked to transfer to the Maritime Commission ships. I stayed at the Yard for 30 months, working 56 hours a week for the first year, including Christmas, Thanksgiving, and Sundays, as here again speed was the essence of all contracts. Now I am 'retired' again. A busy retirement, having acquired various interesting hobbies, among them stamp collecting and being a member of the Philatelist Society and several civic organizations. I went to San Francisco to attend National Engineers Week. The National Societies, about fourteen including the Society of Women Engineers, had lunch at the St. Francis and a good program. I sat with the women, a bunch of smart young women. I am twice their age, but my white hair is respected — the first woman to receive an engineering degree from any school in the United States, thereby 'breaking down the barrier against women in engineering courses.' I only learned all this lately!"

There have been some changes of address — William N. Brown, formerly in Philadelphia is now at 17 Durant Road, South Weymouth, Mass. and Charles Boardman has returned from Florida to South Hanson, Mass., Box 344, Route 1. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

1903

About this time a number of the Class are starting the trek toward warmer climes. Several are now residing permanently in Southern California and others in Florida. Why not send in notice of your whereabouts promptly so that you can be contacted by other classmates in your locality? Tom Sears has taken up his duties as Class Agent and would be glad to receive a word of encouragement from any of us.

Your secretary was pleased to have a call this summer from William M. Gilker of Dallas, Texas, who had been visiting relatives in the East.

It is not too early to be making plans to attend our 55th reunion, as 1958 Alumni Day approaches. — F. A. EUSTIS,

Treasurer, 131 State Street, Boston 9, Mass. LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass.

1904

There are not many news items this month but we have no obituaries to record, so there is something to be thankful for.

Arthur Smith, after rustication on Cape Cod all summer, braved the traffic of Boston recently and reported himself in good health and spirits. Gus Munster reports himself in fair shape but not too vigorous. Gene Russell is still helping the Equitable Insurance Company to pay dividends, and Carle Hayward is slowly winning a battle with the shingles.

The Haywards made a trip to Connecticut at the height of the October foliage display and called on the Currier Langs at their attractive Norwalk home. Currier is still active in various community affairs and is a much respected citizen. He has been a member of the hospital board for many years, part of the time as chairman; and under his leadership a large addition was made to the plant. One of the well equipped corner rooms is named for him, and a bronze tablet designates one entire section of the new wing as the Lang floor. The tablet sets forth the dates of his membership on the board and praises his leadership. A previous edition of these notes told of Currier's appointment to the newly formed Citizens Action Committee and his election as chairman. This committee was authorized by the City Council to advise the mayor on matters which would improve general conditions in the city. It has no power to put its findings into effect but has wide latitude in studying the financial conditions of the city and suggesting any physical improvements or changes which might promote the general welfare of the city. The Langs plan to spend February and March visiting points in the Caribbean by air.

There are doubtless other members of our Class who are still playing an important part in their communities. We can't visit you all and see for ourselves, so forget your natural modesty and write us about what you are doing or have done. Your classmates will be pleased to hear about it. — EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston, Mass. CARLE R. HAYWARD, *President and Acting Secretary*, Room 35-304, M.I.T., Cambridge, Mass.

1905

I determined to be on time with my notes for November, and on September 12 mailed from my office (dead line — September 13) 13 pages of news for the November issue. On October 3 I received from the Alumni Office a notice that because of the arrival of my notes on October 2, they could not be used until the December issue. Whether we should blame the U.S. Postal Service or surmise that the notes were gathering dust in some pigeonhole at M.I.T. is an unanswerable problem. The November news follows.

Mr. and Mrs. Leonard W. Cronkhite landed in New York after a 30,000 mile trip just a few days after Alumni Day so

that his promised review for *The Review* reaches you just about six months late. Here's a summary: On June 8, Mr. and Mrs. Leonard W. Cronkhite of Cambridge, Mass., completed a 33,000 mile air journey around the world to 12 countries including 19 cities and several score educational institutions.

Mrs. Cronkhite, on behalf of the State Department and as vice-chairman of the President's Board of Foreign Scholarships, met with many agencies around the world concerned with Fulbright and other fellowships, and with former Radcliffe students.

Mr. Cronkhite, vice-president of Baird-Atomic, Inc., took part in the conference and exhibit on peaceful uses of atomic energy held in Tokyo, Japan, May 13-20, 1957, under the joint sponsorship of the Atomic Industrial Forum of Japan, and the Atomic Industrial Forum of the United States, of which Mr. Cronkhite is a director. Visits were made also to Baird-Atomic's representatives around the world to further the international business of the company.

In addition to presenting a paper in English at the Tokyo Meeting, Mr. Cronkhite gave in Japanese a six-minute salutation or greeting from the U.S. Forum to the Japanese Forum.

In Japan Mrs. Cronkhite found and visited the school at Shizuoka of which her aunt Myra Veazey had once been principal, meeting many Japanese women who had been taught by Miss Veazey, and who hold their teacher in respected memory.

The round-the-world air tour included London, Paris, Rome, Karachi, Bombay, Calcutta, Rangoon, Bangkok, Hong Kong, Manila, Tokyo (May 10-20), Sydney, Canberra, Wellington, Auckland, Honolulu, Los Angeles and Boston.

From another source we get the story from a bit different angle. "The Atomic Industrial Forum got off to an unusual smiling and graceful start Monday noon.

"Leonard W. Cronkhite, a director of the Forum and vice-president of Baird-Atomic, Inc., Cambridge, Mass., was responsible. Two months ago Dr. Cronkhite said to some of his colleagues he thought it would be a good gesture for one of them to deliver at least one paper in Japanese at the forum. He was elected.

"So the atomist prepared a 600-word-greetings-and-salutations speech in English and gave it to his friend Professor Edwin Reichauer of Harvard University who had taught in Japan, to translate into classic Japanese. Then every day, coached by Rei Sasaguchi who is studying for her doctorate at Radcliffe College, he practiced his speech until he had it down syllable-perfect. This was a real job for a man with no prior knowledge whatever of the Japanese language.

"On the appointed day Dr. Cronkhite rose from the luncheon table at Sankel Hall and said, 'It will be more astonishing than atomic energy itself if you are able to understand what I am trying to say in your language. It will be even more astonishing if I myself know what I am saying.'

"Astonishment and then smiles among the Japanese scientists greeted his opening words. His speech continued on a more sober level to its flawless end.

"Ever since, Dr. Cronkhite has been approached by Japanese gentlemen addressing him in Japanese unable to believe he is not a master of their language. At a reception later his efforts were also rewarded by the warm approval of Ambassador Douglas MacArthur.

"Dr. and Mrs. Cronkhite, who is dean of Radcliffe graduate school, are on an extended Asiatic and Pacific tour—he to meet with overseas representatives of his firm and she to meet with educators regarding exchange scholarships. In Burma (where Mr. Cronkhite was born) he had an emotional personal experience. He looked up his old Indian nurse who had cared for him and his brothers and sisters in Rangoon where they lived as children. The nurse, now 90 and blind, passed her hands over his face, wept with joy. She had named all her children after members of his family.

"Dr. Cronkhite met his wife while he was studying International Law at Harvard after returning from Oxford which he attended as a Rhodes Scholar. They had had fun on this trip over press notices which have run about half and half 'Dr. Cronkhite is accompanied by his wife' and vice versa.

"One of the most remarkable things about the Forum," he said, "is the tremendous amount of hospitality. We are no longer strangers."

"He also spoke of how advanced scientists of Southeast Asia are in knowledge of atomic power and what a terrific era this is for students."

Harry Nabstedt, I, writes "Immediately upon leaving Tech I associated myself with the Ambursen Dam Co. in which Pa Coburn was chief engineer for many years. My experience soon showed me that practical work was interesting and profitable. After a year in the office I went into the construction phase. I designed many fine structures and built 16 located in Canada, the United States, and Mexico, the Rodrigues dam at Tia Juana being the last, the largest, and the most interesting. During those years in the dam building I met many Tech men.

I have been in excellent health during the past 77 years and have seen a lot of this old sphere. During the first 26 years I prepared; the next 26 years I spent the years really working; in another year I'll have experienced the trial of a retired man for 26 years. I do not know how I could have been busier than I have been and still in the best of health, but nowadays I do not find room for many more civilian interests. I have taken an interest in Masonry, holding practically every office, and in 1917 was honored with the '33' in the Scottish Rite. I found the work interesting and well worth while.

Fred Poole, VI, reminds on a postcard showing a picture of the First Unitarian Church, Harvard, Mass., that he was first assistant organ pumper at this church in the 1890's. He and Wallace Taylor are ardent bird hunters and may be seen any day out behind some thick bushes, field glasses in hand, trying to find some new specimen to add to their (paper) collections. Fred was very busy in June watching pileated woodpeckers hatch a nestful. He says "that's once in a lifetime. It requires patience, silence, little motion and

three pair of eyes." Any other bird watchers in the Class? Jim Barlow, I, took a trip to Lucerne, Switzerland in June to attend a Rotary Convention. He visited also England, France, Germany, Switzerland, Austria and Italy.

I had a letter from Lloyd Buell, III, in July which I expected to use in this issue, but a fire in my office quarters a month ago caused a lot of water damage; Lloyd's letter was unreadable with the exception of his new address—c/o C. H. Leavell and Company, Box 1829, El Paso, Texas. Had lunch with Chester Shaw, VI, recently in Boston. Chet, long time retired, had been in Florida principally for the past two years. He was to leave shortly for a trip all over the U.S.A. (a regular pastime) dragging a 16-foot trailer. He is still an active (and operating) member of the National Barn Dance Association. A Shake-A-Leg Show.

Hub Kenway, II, still uses his clients to see the world. In June he spent a couple of weeks in and around London visiting clients, north, southward, and west. While there he was made a member of the Royal Thames Yacht Club, an honor bestowed only on the most important VIP's. Hub furnished transportation for me to Grove Marcy's farm at Franklin, N. H. recently, where Ruth met us and completed the journey to our place at Center Harbor. Grove, II, and Helen seemed in splendid physical condition. The *New York Times* of September 8 carried a front page story of their son, Oliver, who is at present a chargé d'affaires at Budapest. At the recent Fair, Oliver, at the time acting head of the Embassy introduced Tito to the U.S.A. exhibits, including a most modern supermarket, transported in its entirety from the U.S.A. for exhibit purposes.

Grove and I, comparing notes, found that we were tied—eight grandchildren; not a class record, but there are more to come, perhaps. Which reminds me that I had not reported the arrival of grandchild number eight, a daughter to Mr. and Mrs. Hugh A. Craigie '48 at Mountainside, N. J.

Our class agent, Bob McLean, II, recuperating from his arduous duties of writing collection letters, is in Alaska, Skagway to be specific, visiting his son who has been located there for several years. Bob's terse comment: "Temperature today 78°, population 800, strawberries in season now."

With the exception of our 50th Anniversary year, the turnout at Alumni Day was the best in many years. Mr. and Mrs. Babcock, Files, Chesterman, Fisher, Stevenson, Nye, Goldthwait, Gil Joslin, Bob McLean, Grove Marcy, Fred Poole, Charlie Smart, Gib Tower, Henry Buff and Art Balkam, 11 of the above attended the banquet in the evening. Chesterman, although retired, reported that his activities in the Boy Scout work in Philadelphia kept him very busy. Of the above, Files, Stevenson, Nye, Smart, Tower and your secretary are still in the "gainfully employed" class and thankful that their good health permits.

A picture on the sporting page of the *Boston Herald* of August 7 shows Percy Goodale, VI, and his son Ben walking off the course after playing in the 47th Father

and Son's Golf tournament at Winchester, Mass. Percy has played in 46 continuous tournaments. Bert Johnson, III, writes: "I note that some of the Alumni have gone in for genealogy. I have been interested in that subject for several years, and have traced most of my lines back to 1700 and some beyond. Am proving up my Wentworth line, which apparently goes back to about 1600, but seems to be Saxon."

"Most of my ancestors came into the Massachusetts Bay colony and to the north, between Hingham, Mass., and Kittery, Maine." Anyone interested in that hobby might write Bert (Bertrand L.) at 1414 Highland Drive, Woodside Park, Silver Spring, Md. Roy Allen, III, wrote on May 23 that on his trip east he found Dick Senger, III, in the Latter Day Saints Hospital in Salt Lake City where he had been for four months. A wild driver struck him while he was crossing the street (at a crossing) and his leg was badly shattered—two operations and the insertion of a new bone. He hopes to get around without crutches. Roy says Dick is the "spitting image" of Dean Harrison as pictured in an Alumni Day folder. Dick must have retained his pristine pulchritude. Roy had written that having finished his assignment, he was returning to home base, Cambridge, to prepare, perhaps, for permanently locating in California. Today we receive a notice that his present address is 1714 N. Murray St., Banning, Calif.

We have these changes of address—William P. Bixby, II, 17 Collier Avenue, N. Scituate, Mass.; P. O. Minot, Mass.; Robert S. Beard, 370 Morris Avenue, Mountain Lakes, N. J.; H. L. Walker, 39 East India Lane, Norristown, Pa.

It would seem we have enough "live" news above to appease those who have claimed we never have anything but obituaries, so we furnish this information. Samuel Shapira, III, died at his home in Brookline, Mass. on June 3. Sam had been lunching with a few of us (M.I.T. men of various classes) for several years. He had just before stated that his doctor had given him a thorough check-up, warned him that he should be his age and that his "ticker" didn't seem too bad. The end came suddenly. Sam had been employed steadily for several years by Fay, Spofford and Thorndike as engineering estimator. He leaves his widow and a son, Norman I. '41, a lieutenant colonel with the Allied Land Forces of Southern Europe in Italy. Those of us who dined with him daily, as well as many others, will miss Sam's jolly presence greatly.

Warren W. Loomis, VI, died suddenly at his home in Holliston, Mass., on May 23. Bunny was a purchasing agent most of his life, first with the Stone and Webster Engineering Corp., later for the Christian Science Monitor and the City of Boston. He was a life member of Norfolk Lodge, A. F. and A. M., a director of the Needham National Bank, a former member of the Needham School Committee, and for many years an active worker in the Boy Scout movement. Buried at the Christian Science Church in Wellesley, Mass. He left a widow, a son, two daughters, and eight grandchildren. Francis E. Drake, II, died at his home in Pelham, N. Y., on August 5. I had heard

from his wife from time to time since the 50th that Frank was not well, was declining, but did not expect the end so soon. I quote from a newspaper clipping: "He was widely known as a designer of propane gas plants for utilities and general industrial use. Born in Springfield, Mass., he received a mechanical engineering degree at M.I.T. Mr. Drake started his career as a draftsman and became manager of the gas department, supervisor, and subsequently vice-president of the Utility Management Corporation. He also served as vice-president and chief engineer of the Pacific Gas Corporation. . . .

"In 1951 he helped to form the Drake-Townsend organization and had served as its vice-president and treasurer. He held the same posts with the Draketown International Corporation. . . .

"Mr. Drake was a former chairman of the water gas committee of the American Gas Association, and had been known within that group as an authority on gas generation and distribution. Mr. Drake was also a former vice-president and general manager of the Lynn Gas and Electric Corporation in Massachusetts.

"Mr. Drake leaves his wife, Mrs. Grace Johnson Drake; a son, Francis E. Drake, Jr.; two daughters, Mrs. Arthur E. Parks and Mrs. Herrick K. Lidstone; his mother, Mrs. Martha A. Drake of St. Petersburg, Fla.; a sister, Miss Anna Drake; and eight grandchildren."

Leonard H. Foley, II, died at his home in Natick, Mass., on July 26. Len was also associated with Stone and Webster for many years as engineer, later with W. D. Cashin Co., South Boston, as sales manager. On retiring in 1954 he has been employed by the Army Corps of Engineers in Boston. He left a widow, two sons and two grandchildren. Harry J. Guerin, I, died at his home in Rockland, Mass., on December 18, 1956. No details have been obtainable. Through Sid Caine we learn that Claude Anderson's wife died early in May of this year. Claude at the time was in the All Saints Hospital in Philadelphia, unable, apparently to understand the situation as his long sickness had obviously "dulled his mind." (Sid's words)

Not much news has flowed in since the November material above. I had previously neglected to mention that John A. Meggison, VI, of Galena, Kansas, called at my office in the early summer en route to Maine as a delegate to a convention of a religious project to which has been very loyal and for which he has been a very hard worker for many years. He appeared in good health and looked considerably younger than his years.

There was a 1957 reunion of the Class, although not advertised and not fully representative. Through the courtesy of Bill and Alice Spalding, who were spending the fall at their autumn home at Conway Lake, N. H., Hub Kenway, Grove and Helen Marcy, Ruth and I assembled for a glorious day amidst fall foliage. A good time, etc., etc.

Jack Flynn, II, writes from Buenos Aires that he and Susana have just returned from a long trip which included Spain, Mallorca, France, Switzerland, England and Ireland, thence to the U.S.A., to Murray Bay in Quebec, Venezuela, and other places. The Prince Crowells have

also been traveling. A letter via Andy Fisher, which by the way he sent me because he couldn't read it, tells of the Crowells traveling through northern Vt., thence to Cape May, N.J., to see the hawks' migration. They must have reached there, because a note from Fred Poole tells of meeting them there. Fred, who is also a bird watcher, was migrating southward with the birds, stopping at Cape May to attend the American Ornithologists Union Convention. He expects to winter (with the birds) at Apopka, Fla. The rest of the story about Prince Crowell is that he is the same old yachting "nut." Apparently he came in second in several yachting championships off Cape Cod and Martha's Vineyard. Cannot give details because some of the letter (very charitable) is undecipherable.

I have to report the sad news that Ralph Patch died on September 18 after a very long and incapacitating illness. Ralph got his degree with '06. Undoubtedly details of his life will be found in the 1906 class notes. Walter Eichler, II, has apparently settled on Cape Cod at his previous summer address, 56 Miles Street, Harwichport, Mass.

Over 50 fellows paid their 1957 dues assessment (\$5.00), so that the Class has a respectable bank account. However, if a conscience is bothered because of neglect, a voluntary contribution would be accepted. — FRED W. GOLDTHWAIT, Secretary, 274 Franklin Street, Boston, Mass. GILBERT S. TOWER, Assistant Secretary, 35 North Main Street, Cohasset, Mass.

1906

As I write these notes in early October, the fall foliage is glorious in spite of the devastating drought much of New England has experienced during the past four or five months, breaking a record of more than 140 years. When you read them, however, you will likely be getting busy with Christmas cards and the good wife will be wondering what to give the grandchildren this year! Herewith are cordial Yuletide Greetings from Ned and Marion, with best wishes for your health and happiness.

It is always a joy to receive a full account of a man's career and thereby avoid a lot of research. The *Lowell Sun* of June 12 contained such an account about Herbert Ball at the time he received the honorary degree of doctor of science from Lowell Technological Institute, as follows: Born January 27, 1885 (in Cambridge), he was graduated from M.I.T. in 1906 with the S.B. degree in mechanical engineering; and from two teaching offers at M.I.T. and L.T.I. chose the latter, where he was a faculty member until 1955, when he retired after 49 years of service. To him is credited the origin and development of the concept of a textile engineer. Professor Ball served as acting president of the Institute in 1945-46 during the absence of President Fox, who was in Europe. He has served as member of the Executive Committee, vice-president, and president of the American Society for Testing Materials. In 1930 he was elected chairman of Committee D-13, the textile committee of A.S.T.M., and held that office for 20 years, bringing renown and

prestige to the organization. In March, 1953, he was awarded the Harold DeWitt Smith medal for his outstanding services to this group by Committee D-13. Professor Ball served as delegate to a meeting of the Textile Committee of the International Standards Organization in Buxton, England, in 1948 and attended the annual meeting of the British Textile Institute. He then went to France as a delegate from the United States to the International Silk Congress; at Beaune, France, he was initiated as a member of the XLIII Chapitre des Chevaliers du Tastevin at Chateau du Close de Vougeot. He is chairman of the administrative committee on end products of A.S.T.M., a member of the New England District Council, and representative of A.S.T.M. on the consumer goods committee of the American Standards Association.

He was graduated from Northeastern's School of Commerce and Finance in 1916 with honors in professional accountancy and for many years taught these subjects in addition to his engineering courses. He has published several technical papers, pamphlets, and bulletins and has supervised thesis work for many graduate students. A fellow and chartered textile technologist of the British Textile Institute, Professor Emeritus Ball holds membership in the A.S.T.M., American Society of Mechanical Engineers, the American Society for Quality Control, the American Society of Engineering Education, and the Textile Research Institute. Professor Ball, known to hundreds in education and industry and to Alumni as H. J., resides at 34 Pentucket Avenue with his wife. They have two married daughters. (Professor Ball married Fannie J. Backcock in 1907.)

Another lifelong teacher is Herbert S. Philbrick, II, longtime professor — now emeritus — of Northwestern University in Evanston, Ill. Born in Waterville, Maine, in 1875, he had earned his A.B. at Colby before coming to Tech for his S.B. with '06. Except for a few years prior to 1914, when he was assistant professor of mechanical engineering at the University of Missouri, he has lived at the same address in Evanston. Early last June H. S. visited a plant in Waterville, about which the *Morning Sentinel* has this to say. Back in 1906 when Martin Keyes was making paper plates in Shawmut he engaged a young engineer just out of M.I.T. to do some engineering work for him in connection with the new plant he was building in Waterford. This week that young man came back to visit the Keyes Fibre Co. plant he had helped nourish in its infancy. He is Professor Herbert S. Philbrick of Evanston, Ill., a straight and keen man who is still active at 82, although he is now retired from his position as Dean of Men at Northwestern. Keyes, the inventor of the molded pulp process, employed him to work on the layout of the new plant and do drawings for the machinery. In the intervening 51 years Professor Philbrick had often thought of the plant with whose establishment he had played such an intimate role; and this spring when he came to Maine to open his summer home on Squirrel Island, he requested an opportunity to go through the plant. (This he did, being greeted by the president of the firm. He also planned to visit Dr. H. C.

Libby, retired professor of Colby, of which H. S. was a trustee from 1927 to 1930.)

In the July Review the death of William I. Lourie, II, on December 11, 1956 was reported, notice having been sent to the Alumni Office by his widow. Early in September a letter of condolence was sent to Mrs. Lourie giving an outline of his career taken from our records and seeking information about his family, but at this writing no reply has been received. As reported in the January notes, Bill had written Jim just before our 50th that he was sorry he couldn't attend because of illness, which apparently was serious. He was born January 21, 1883, in Russia; but his youth was spent in Boston, as he came to Tech from English High. His thesis — with C. H. Chase — was "Tests on Hydraulic Mortars." He had been a member of the Mechanical Engineering Society, on the gymnastic team, and was particularly interested and active in the Chess Club, being vice-president, business manager, and on the executive committee our junior year, when there were 11 '06 men in the club. His career was entirely with steel companies, although we have no record prior to 1910 when he was in Duluth with the Minnesota Steel Co. From early 1916 until he retired to Florida in 1954, he was in Youngstown with the Ohio Works of Carnegie, becoming successively mechanical engineer and design engineer.

One of the deaths reported in the November notes was that of Henry R. Patterson, II, (A.B. Harvard) on June 3. Henry was born July 7, 1883, in Roxbury, Mass., prepared at Boston and Roxbury Latin, and entered Tech our junior year. He was a member of the Mechanical Engineering Society. His entire career, after one year as assistant in the mechanical engineering laboratory, was with one steel company, as superintendent of the American Steel and Wire Co. plants in Trenton, N.J.; Joliet, Ill.; Rockdale, Ill.; Braddock, Pa.; Donora, Pa.; and Cleveland. Berkeley, Calif., was the location of his retirement in 1948. In March, 1913, he married Elizabeth E. Gee, and their three sons — Junior, Richard, and Robert — all graduated from Carnegie Institute of Technology in mechanical engineering.

Another death reported in the November notes was that of William J. Lumbert, I and IV, who was with the Class freshman year, apparently did not attend sophomore year, and is listed as '07 our junior year and in Course I. However, he is in the class photo in the '06 Technique taken on Rogers Steps. Bill was born in 1883 in Needham, Mass., and from the *Scituate Herald* of June 20 we quote: "Lumbert was named Civil Defense director for Scituate by the Selectmen in October, 1954. Under his direction the C.D. served the community well during local emergencies such as the storm which grounded the Etrusco. From September, 1931, until his retirement in 1953 he was superintendent of the Scituate Water Department. He is a veteran of World War I, and during World War II was assistant to the Civil Defense director. At various periods he served on the Charles River Basin Commission, the Massachusetts Highway Commission, and was Public

Works Commissioner for Reading and Saugus. He was a member of the Masonic bodies. He is survived by his wife, Hortense E. (Murch); a daughter, Mrs. Patrick McDermott of Taunton; and two sons, Charles W. of Long Beach, Calif., and Allyn R. of North Weymouth; and five grandchildren."

The death of Nugent Fallon, I, on July 24 was also briefly reported, a letter of sympathy having been sent to Mrs. Fallon, who promptly returned a note of appreciation. Nugent was born in Boston on March 22, 1884, prepared at Mechanics Arts High, and was with the Class all four years. He was one of the most popular and versatile men in the Class, being interested, and active, in athletics, music, drama, and politics. He was on the freshman tug-of-war team and captain of the winning sophomore team, also took third place in the pole vault in the 1903 Indoor Meet; on the Mandolin Club and in the 1903 Tech Show; member of the Civil Engineering Society, Mandaman Club, and Osiris; marshal of the Tech Republican Club; a director of the Class; secretary-treasurer of the Institute Committee; and statistician on the Technique board. In the December, 1952 notes Jim quoted from a newspaper article about Nugent's career. From this article and from our records, the following is taken. For a few years Nugent was with the Boston Elevated; then he was division supervisor for Mexican International Railroad. In 1915, according to the Alumni Register, he was a shoemaker in Lynn. But he soon entered the mortgage and banking business, which became his life's work. After working with the First National Bank in Boston, he was with the French-American Banking Corp. in New York, becoming secretary-treasurer. For six years he had a mortgage banking business of his own in New York. In 1933 he was called to Washington to assist in setting up the Home Owners Loan Corp., becoming deputy general manager, and in 1934 becoming general manager of the Federal Savings and Loan Insurance Corp. (corresponding in the savings and loan field to the Federal Deposit Insurance Corp. in commercial banking). In 1941, Nugent became president of the Federal Home Loan Bank of New York, from which he retired in 1954, then becoming chairman of the board of the Suffolk County Federal Savings and Loan Association at Babylon, Long Island. Nugent was another of our classmates who served his country and its allies loyally and effectively in World War I, as recorded in the Technology War Record from which we quote in connection with Naval Air Service hunting submarines: "Another of our pilots who saw service of the most active type was Ensign Nugent Fallon. Perhaps the most noteworthy incident in which it is known that Fallon was involved was a combat with a submarine which took place in the North Sea. Fallon's pilot received a bullet through the neck which seemed likely to cause death. Fallon left his seat at the machine gun and succeeded in crawling to the pilot, to whom he administered first aid; he then brought the seaplane in safely. For this and other acts, he received highest commendation from his commanding officer and Admiral Sims."

In the note with the clippings from the New York papers which he kindly sent, Stew Coey said: "Nugent had been in bad shape for two years and was unable to attend our 50th reunion because of his condition." Incidentally, I learn from his letterhead that Stew is a P. E. (whatever that is — perfect — peripatetic — perennial?) with Air Research Associates, consulting engineers in air conditioning, air sanitation, air and gas treatment, and so forth.

A few days after the notes were sent in for the November number, an obituary in the *Boston Herald* reported the death on September 18 of Ralph R. Patch, XI, at his home in Stoneham; and your secretary represented the Class at the service in the First Baptist Church there. Ralph was born May 9, 1882, in Stoneham, attended Stoneham High School, and entered Tech in 1901 with the Class of '05. In our freshman year he was taking Course I, his second year as a special, but he joined '06 our sophomore year in Course XI and graduated with us. He has been one of our very loyal members ever since, attending many of the reunions and Alumni Days. Like Nugent, Ralph had many interests during undergraduate days (and has since), being on the class baseball team; in the Quartet and Glee Club; in Tech Show; member of the Tennis Association, Civil Engineering Society (president and treasurer), Technology Club, Tech House (a resident two years), Y.M.C.A., Class Day Committee, and Senior Portfolio. He became prominent as a pharmaceutical manufacturer and remained so for half a century, joining his father's firm in Stoneham in 1906, becoming assistant superintendent in 1910, vice-president and sales manager in 1915. He succeeded his father as president and treasurer in 1924, then became chairman of the board.

During World War I Ralph was chairman of the Stoneham Fuel Committee and of the Drug Trade Section, First Liberty Loan Campaign for New England. In 1936 he was a lieutenant colonel, Army Reserve Corps, and in 1942 he retired temporarily from active work in his company for Army duty as lieutenant colonel in the Supply Service, Office of the Surgeon General, assigned to medical procurement. He retired from Army service in 1945. His civic and business connections were many: at various times he was Commissioner of Public Works; Town Moderator; chairman of the School Committee planning board and of Red Cross; and director, Stoneham Home for the Aged; trustee of the Stoneham Five Cent Savings Bank, the Stoneham High School Alumni Loan Fund, Massachusetts College of Pharmacy, and the Charlestown Savings Bank; on the board of governors of the University Club; holder of various offices, including president of Massachusetts Drug Travelers, American Pharmaceutical Manufacturers Association, and the Boston Druggists Association. He was a lifelong active member of his church. Some 20 years ago Ralph wrote: "With time out of school and summers while in school, I spent three years at engineering. I liked engineering very much and did not want to leave it for the medicine business. Did not like the medicine business at first,

but after digging away at it for a few years I found it had much of romance and of interest, with great possibilities of service to the sick. Later came equal emphasis on keeping people well." Ralph was married in 1907 to Christine V. Johannot. He is survived by two daughters, Mrs. Earle L. Sims of Harwich and Miss Alma Patch of Stoneham; a son, Edgar L. Patch of Chicago; and three brothers. His wife died on September 30, 1952, having been almost helpless and requiring constant attendance for several years. Ralph had given his entire time to her. Unfortunately, for the past few years Ralph has been quite helpless, too; and while it is with sorrow and regret that we record the passing of a dear classmate, he had lived a life of good works.

Another name is added to that lengthening list. In September Jim received a note from Mrs. Browne that Frank Atwood Browne, XIII, had died on August 30 after a long illness. Jim promptly replied, expressing the sympathy of the Class. Frank was born July 21, 1881, in Westboro, Mass., and came to Tech in 1902 from Westboro High School. He graduated with us in naval architecture and marine engineering, his thesis being "Test on Boston and Northern Power House at Lowell." For the next eight years Frank was with the Isthmian Canal Commission at Culebra as assistant engineer in the office of the chief engineer, and during the first world war he was mechanical engineer with the Shipping Board, then manager of purchase and procurement with the Emergency Fleet Corp. Prior to his war service and since then, he has been associated with the Barber Asphalt Paving Co., first as superintendent of the Buffalo plant and since 1917 as consulting engineer with his own firm in Philadelphia. He leaves his wife, Edna (Dever) Browne; a son, Junior, of Alexandria, Va.; a daughter, Mrs. George Carson of Wynnwood, Pa.; and a sister, Miss Minnie M. Browne of Westboro.

At rare intervals we secretaries hear from some long-lost brother, and it gives us a lift! Recently a note came from Dan Luehrs, XIII, who for some years had a consulting office in Philadelphia and more recently has gained recognition as a specialist in medical and scientific photography, being listed in the 1957 *Who's Who in the East*. Charlie Holmquist evidently only spent the summer on the Maine coast, as he is back in Albany. In that connection, the Alumni Office would probably approve the suggestion that when address changes are known to be only temporary, the regular card (obtainable at the post office) for forwarding *The Review* be left at the home post office and a post card be sent direct to the class secretary, giving the temporary address. By so doing a whole series of operations in the Alumni Office will be eliminated, as well as some expense; and the addressee will be more likely to get his *Review* with less delay. — EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills, Mass.

1907

A clipping from the *Cape Codder*, published in Orleans, Mass., sent to me last September by Milton MacGregor, shows

a picture of our classmate, together with his daughter, Mrs. Charles Crooker, and his granddaughter, Carol, climbing Mount Washington in New Hampshire on Mac's 73rd birthday. He wrote that they were taking their time and enjoying a marvelous day. Some of you will remember that the White Mountains area has been familiar territory to Mac for many years, and he is still known there by the old-timers as Red Mac, referring, of course, to the tinge of his hair—as it was in younger days!

Ernest Altgelt, consulting engineer, at Route 8, Box 252, San Antonio, Texas, attended Agricultural and Mechanical College of Texas from 1900 to 1904 before going to M.I.T., receiving his B.S. degree in civil engineering. Last September I received a letter from him with which he enclosed a group picture of the students at that school taken in 1902, with Ernest in the front row wearing campaign hat, blue woolen shirt, and cadet trousers. I'll add this to our class archives, and publicly express to Ernest my gratitude for sending it to me.—You men who were at the Institute on Alumni Day last June will remember that Leverett Cutten was not entirely satisfied with the appearance of the mace that he had made, and which he presented to M.I.T. on behalf of our Class. He took it back to his home in Allentown, Pa., to do some refinishing on it, and then returned it to the office of Don Severance, secretary-treasurer of M.I.T. Alumni Association, in mid-September. Don wrote to me on October 3: "It is a beautiful job and looks so much nicer than it did even on Alumni Day." None of us can adequately express our appreciation to Leverett for making possible this unique and precious article of ceremonial equipment for '07 to give the Institute.

We have learned through Leverett of the poor health of our classmate, Edbert C. Wilson, 24 Central Avenue, Waterville, Maine. Ed would sincerely appreciate letters from us. May I suggest that you write to him.

In a folder of M.I.T. Alumni news prepared by our Alumni Association some months ago mention was made of a Class of 1920 man who had taught a Bible Class for 25 years. Phil Walker, our class treasurer and assistant secretary, became the teacher of the Young Married Couples' Bible Class at the United Presbyterian Church in Whitinsville, Mass., on January 2, 1921—nearly 37 years ago—and has taught it continuously ever since. The class of 78 active members meets regularly on every Sunday of every year. Many of the "young" couples are now grandparents! Your class secretary was president of this class during 1952.

My sincere wishes to you all for a joyful and blessed Christmas season, and a New Year filled with experiences and activities that will be thoroughly worth while and uplifting.—BRYANT NICHOLS, *President and Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary and Treasurer*, 18 Summit Street, Whitinsville, Mass.

1908

The second dinner meeting of the 1957–58 season will be held at the M.I.T. Faculty Club on Wednesday, January 8,

1958, at 6:30 P.M. Why not make a New Year's resolution to attend our dinner meetings on Wednesdays January 8, March 5, and May 7. You know that 1958 is our Big Year, as in June we celebrate our 50th. Just because you have not attended one of our dinner meetings recently is no excuse—come and get acquainted with the gang again so you won't be a stranger when you attend our 50th in June.

As mentioned in George Belcher's letter of September 27, 1957, our 50th will be held June 13 to 15, 1958, at Snow Inn, Harwichport on the Cape, where we had our 45th. We are expecting a big turnout, so make your plans now to attend. You can't afford to miss your 50th. A post card received from Jimmie Burch at the Sands, Las Vegas, Nev.: "Just passing through after visiting lumber mills in New Mexico and Arizona, and now heading for San Francisco. This is a good place to replenish the exchequer." Apparently he did, for a later card from Sequoia National Park showed some of the big trees. I imagine he would like to buy a few of them.

Am sorry to report the death on July 15, 1957, of Bill Kerr at his home in Baltimore, Md.

How about sending in some news? You probably took some interesting trips during the summer and perhaps met some '08 men. Why not tell us about it?—H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer and Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

1909

In the November number of *The Review* we told of the conference of Alumni and class officers and said that in this number Jim would tell the Class his impressions of the meeting. He writes as follows: "This past September it was a privilege to attend the second Alumni Association Conference for officers of the Association and classes, and again it was most informative and interesting. President Killian in his usual good form spoke of the needs of the Institute, the most prominent in his mind being the raising of faculty salaries, a movement which we all approve. We were also given much interesting information on the aims and methods of instruction which are so different from and better than those in our day. Of note to our Class was the fact that our two honorary members took leading parts in the program. George Harrison gave a most amusing talk at the dinner; in fact, this was the only really light part of the two days. He was at his best and enjoyed by all. At the Saturday luncheon, Dr. Van Bush spoke for the Alumni asking that we help in directing to the Institute boys (and girls) of the highest ability and scholarship to carry on the high standards of the Institute.

"In discussing the achievements of the Institute, Dr. Harrison described the diffraction grating made in his department, 10 inches with 15,000 lines per inch, the most precise so far achieved; and he stated that he is now ready to make a 14-inch one. Certainly this is a most important achievement.

"It was also pleasing to note in the report of the Alumni Fund that our Class

rates well in contributions, a fact that augurs well for the 50th fund toward which we are now building. Dr. Killian emphasized several times during the conference the importance of the Alumni Fund in the affairs of the Institute."

In the November number we gave the names of the members of the Class who attended Alumni Day on June 11. Inadvertently the name of Kenneth May, VI, was omitted. Moreover, we also should have included the name of Hazel Gram who attended as the guest of Art, I, and Betty Shaw. In mentioning the name of Hazel Gram, it will be remembered that we told of a visit by her in June, 1956, when she discussed with the Class officers her intention of establishing a scholarship fund to be known as "The 1909 Memorial Fund." The purpose of her recent visit with the Art Shaws was to conclude arrangements for the start of the Fund. She has since assigned to the Institute some securities having a value of well over \$2,000. Her contribution to the Fund is, of course, in memory of Carl, who was both our undergraduate president and our alumnus president. Hazel is also writing to the other '09 widows advising them of the Fund should they wish to contribute. She has stipulated that the Fund is to be used to give scholarship aid to descendants of the members of '09; or in years when no such descendants qualify, the income may be devoted to general scholarship purposes. The Class surely expresses its gratitude to her for initiating such a worthy project.

We have just received another news item relative to the Gram family. A news release from the Instrument Society of America (I.S.A.) has a heading, "Worthington Man Elected to National Office." The release continues: "Carl W. Gram Jr., vice-president of sales for Mason-Neilan Division of the Worthington Corporation, was elected district vice-president of I.S.A. at the Society's annual meeting at Cleveland, Ohio. I.S.A. is the nation's only professional and technical society devoted exclusively to all aspects of instrumentation and automatic control. More than 25,000 of the nation's leading engineers, scientists, and executives from industry and government attended the meeting." Carl, Jr., lives at 1192 Park Avenue, New York City, with his wife and three daughters. The Class is pleased to learn that Carl's son is doing so well.

A year or so ago we reported that Mayo Hersey, II, was scheduled to retire from his position as research consultant at the Engineering Experiment Station at Annapolis but that his services were so indispensable he was asked to remain another year. That year terminated last May 17. We have received a copy of the *E.E.S. News* showing a picture of Mayo in which he is called a "dynamo of energy who for 46 years has pioneered the way to practical engineering lubrication. . . . Since 1910 publications by Mr. Hersey have included 61 scientific papers, approximately 100 articles, and two books." Space does not permit listing all the honors and citations that have been awarded to Mayo, but they include a medal from the Franklin Institute. We should also mention that Mrs. Hersey was once assistant professor of English at Wellesley College, is an

author of several books, and was awarded the honorary degree of doctor of letters by Mt. Holyoke College. Mayo and Mrs. Hersey spent the summer at Monument Beach, Mass. This year he is visiting professor of engineering at Brown University.

John Davis, II, who spends his summers at Crow Point, Hingham, Mass., reports the following: "Howard Fisher and his wife Caroline called on us here at the time he came to Crow Point to bring his aunt, who was from Scotland and who was visiting a neighbor of ours, to his home in Rumford, R. I. Howard was looking fine and so was his wife. They celebrate their 45th wedding anniversary next year. Howard has sold his business, or combined it, with the Galbraith Company, so he now works when the spirit moves him. He said he would try to attend the next reunion."

John, who was a close friend of Carleton Hubbard, learned of his recent death and was kind enough to write the following tribute: "Carleton Waterbury Hubbard, II, passed on May 16, 1957, at his home in Greenwich, Conn. A letter from his wife, Katherine, said that Carleton died in his sleep the day after the doctor was pleased with his usual checkup examination of him. He was a member of the Mechanical Engineering Society and its president his senior year; also a member of Masque, the Institute Committee, the Class Day Committee, the Tech Show chorus, and a principal in the Tech Show in his senior year. His thesis with Philip E. Young, II, Howard C. Fisher, II, and John F. Davis, was service test on the steamship *Harvard*, which at the time, with its sister ship *Yale*, carried passengers and freight between Boston and New York. Carleton was familiarly known as Pop, not because he was a few years older and his hair thinner but for his patient, calm manner, his wise counsel, and his unfailing belief in high ideals." A large part of a column in the Greenwich paper was devoted to Carleton. After graduation he was employed by the Mianus Motor Works, the Sayles Finishing Plant in Rhode Island, and by engineering firms in New York City. In 1925 he opened an office in Greenwich where he practiced as an architect, specializing in heating and ventilating. He did much work for the town in designing an incinerator, remodeling schools, and so forth. He was formerly a member of the Board of Education, secretary to the School Board, and supervisor of business. He married the former Katherine Florence Chase, who survives, in 1913. Also surviving are two sons, Malvern D. Hubbard and Dr. Richmond C. Hubbard; two daughters, Mrs. Paul F. Wilson and Mrs. Richard P. Zeumer; and 14 grandchildren. We have written to Mrs. Hubbard expressing the sympathy of the Class. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 250 East 43rd Street, New York 17, N. Y.; GEORGE E. WALLIS, Wenham, Mass.

1910

It is with deep sorrow that I have to announce the passing of our classmate Weymer H. Waite on September 13. The following is from the *New York Herald*

Tribune: "Weymer Hinchley Waite, 70, real estate dealer and builder, died here yesterday in his home in Hudson House after a long illness. Mr. Waite built and was part owner of the Weylin Hotel at Madison Avenue and 54th Street, New York. He also built Hudson House and several other apartment buildings in Westchester County. He was born in Boston, a descendant of Thomas Hinchley, a Pilgrim governor of Massachusetts. He attended Massachusetts Institute of Technology and was graduated from Columbia University. He was a veteran of World War I."

Carroll Shaw has been retained by the Boston Real Estate Board as an expert on an investigation of the Boston Edison Co. fuel rates. He had been testifying at the State House in September and continued his testimony in late October.

Herbert Reynolds has retired from his position as plant manager of Sem-Equipment, Inc., of Salt Lake City and has moved to Palos Verdes Estates, Calif. Herb's note says: "I have decided to get away from northern winters with their ice and snow."

John Barnard and his son are practicing architecture together with offices in Boston and in Cape Cod. John manages to take occasional trips to the Carolinas in the spring and fall. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

1911

"Remember? Technique 1911 predicted that Bunny would be the most successful man in the Class. Are we proud!" This was the apt accolade that President Don Stevens, II, wanted bestowed on Irving White Wilson, XIV, in accordance with the news in the following abstract of a story in the *New York Times* of September 20:

"Directors of the nation's largest aluminum producer, the Aluminum Company of America, yesterday elected I. W. Wilson chairman of the Board, succeeding Arthur Vining Davis, who retired on August 2. . . . Mr. Wilson, president since 1951, will continue to serve as chief executive officer. He will be 67 years old next week (September 26). . . . Mr. Wilson has been called the 'dean and spokesman of the aluminum industry.' In the trade and in government circles he is known as 'Chief' Wilson. His own version as to how he came by that nickname was that when he was a youngster in his home town of Bloomington, Ill., the fire chief was named Wilson. Later the Pittsburgh Pirates had a ballplayer named Wilson. 'I just naturally inherited the title because my name was Wilson, too,' he says."

Just before this news broke, Bun had written me thanking me for having sent him an obituary of his thesis mate, Otis Hutchins, XIV, whose death we reported in last month's class notes, and congratulating me on my Bronze Beaver award. He said he regretted he didn't seem to cross paths with classmates, but did receive greetings through a mutual acquaintance from Zeke Williams, II, when both had been in Vienna, Austria. Later, when acknowledging a congratulatory note on his new chairmanship honors, he wrote: "As always you do not seem to miss a

trick and I fear for the day when my name may appear in the police news, as I am sure that you would pick it up."

Carl Richmond, I, sent a clipping from a mid-August issue of the *Silver Lake News* (Kingston, Mass.) with an article headed: "Propagates New Blueberry Bushes," with a fine picture of O. W. Stewart, I, at work in shade house and rooting beds. According to the story, O.W. specializes in the propagation of several new varieties of blueberries approved by the U. S. Department of Agriculture during the past seven years, listed in order of time of ripening as Early Blue, Ivanhoe, Blue Ray, Berkeley, Blue Crop, Herbert, and Coville.

When visited by the Cape newspaper's correspondent, he was taking some softwood cuttings from his Early Blue variety and admitted that he was somewhat behind schedule at this relatively late growing date for rooting softwood cuttings, adding that hardwood blueberry cuttings may also be taken from dormant branches for rooting in the spring.

The article continues: "Any of the new varieties of cultivated blueberries, when allowed to ripen naturally on the bush, are very sweet and possess distinctive flavors; but Stewart stresses that every berry must be blue for a period of days before it acquires its real flavor. Located along the banks of Trout or Furnace Brook, which supplies ample underground water, his Kingston blueberry fields enjoy ideal conditions on a site originally consisting of a damp field and wooded maple swamps." Send orders, in season, to O. W. Stewart, Elm Street, R.F.D. 2, Kingston, Mass.

Massachusetts manufacturers were particularly pleased when the Massachusetts Legislature, which set a new long-distance time mark this year, finally killed a plan to set up a withholding system for state income tax payments. Fight against it was led by Senator William F. Fleming (D., Worcester), who read a letter from our Fred H. Daniels, VI, praising him for his "courageous vote" against the withholding bill. Fred said his company (Riley Stoker Corp.) "was fast being pushed into leaving Massachusetts" as a result of tax requirements of this type, concluding that the withholding plan might be "the last taxation straw that breaks the camel's back."

In opening the 60th academic year of Northeastern University in Boston this fall, President Carl S. Ell, XI, announced that nearly 18,000 students are now enrolled in the four day colleges and the evening division. He also announced further extension of the graduate engineering program on the cooperative plan of education, whereby a master's degree could be earned in two years of alternate work and study. In late September Northeastern purchased the Boston Opera House and plans to build on the site, directly across Huntington Avenue from the university. (How many of us remember being supers now and again at the then new Boston Opera House?) Plans are also underway for the possible purchase of a city-owned acre on the Fens for a president's house for Carl and Etta, and during all this Carl finds time to be cochairman in Newton for the United Fund!

Finding that he "could not take the

southern climate" Royal Barton, VI, and his wife, Jessie, have returned to New Jersey; and while negotiating for building a new home they have leased a small cottage at 45 Mohawk Avenue, White Meadow Lake, Rockaway, N. J. It was nice to hear from Royal that Jessie had responded very well to medical treatment after a nervous disorder and now promises to be "back to her old self in a couple of months." Currently they are in the same town with a daughter and her family, but the son-in-law has changed positions and the couple with three children will be moving. "I have about decided," Royal concludes, "getting old and retiring has its drawbacks."

Jim Campbell, I, has been chosen as class luncheon leader for 1911 under the new plan the M.I.T. Club of New York inaugurated this fall, with our Class meeting at noontime on the first Tuesday of each month at the club headquarters in Hotel Biltmore. He and Pat Russell were "it" at the initial October affair, but once the idea gets rolling he looks for a good contingent. Fortunately I expect to be in Big Town January 5 to 8 for the annual Retail Association Convention, so President Don already has plans underway for the annual "Welcome to Dennie" 1911 luncheon on January 7. If any of you are in New York on a first Tuesday, attend the 1911 lunch at the M.I.T. Club. Jim also advised that Dick Ranger, VIII, is now spending a lot of time in Hollywood, Calif., on magnetic tape work.

Henry VanHovenberg, XI, has retired after 40 years of railroad service, most recently as engineer of tests and sanitation for the Cotton Belt Railroad at Mount Pleasant, Texas. He joined the Cotton Belt in 1941 as fuel oil inspector. His mail address is Box 288, Mount Pleasant, Texas. Norman Duffett, X, is now splitting his residential year between Niagara Falls, N. Y., and Lake Worth, Fla., where he will be glad to welcome classmates at 214 South Palmway from mid-November to mid-April.

Roy MacPherson, II, fellow Framinghamite, who keeps his boat at Quincy Yacht Club, combined his knowledge of meteorology and his sailing skill to come up with top honors in a fall combined cruise by several of the south shore Massachusetts boat clubs. He estimated in advance his arrival times at three ports of call with a minimum of variation (no watches allowed to any of the skippers and a "spotter" on each craft entered).

These notes are being written over the Columbus Day week end to meet an October 14 deadline and I hope you all listened to Mike Wallace's A.B.C. interview on television at 10:00 P.M., Saturday, October 12. Subject: The Earth Satellite. Interviewee: General George C. Kenney, I. Nuf ced. It was indeed thrilling and almost like having George right in your living room. Hope you didn't miss it.

We'll have reports on the annual "Seven Come '11" class dinner at the M.I.T. faculty Club November 7 in the January notes and the annual Dennie lunch at Hotel Chatham in New York January 5 in the February issue. Attend either or both of these affairs if you are in that vicinity. Meanwhile, although no reports have yet been issued on progress of this year's

(1957-58) Alumni Fund, I am sure that all of you will continue generous support to keep our glorious Class in the forefront. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Framingham, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

One of the most pleasant features of the reunion at Harwichport was the open house maintained by Mr. and Mrs. Charles Rowley at their attractive summer home near the Snow Inn. Their generous hospitality was greatly appreciated by everyone.

Charles L. Tuller has retired from Ford Motor Company after 44 years of supervisory work with them. His last assignment was as manager of production control of Mercury Division, and although he requested retirement three years ago he had been asked to stay on. Numerous affairs in his honor were given on his retirement by top officials of Ford, including Benson Ford, general manager of the Mercury Division.

Mrs. Tuller has been active in local activities, being past-president of the Royal Club, Director of the Girl Scouts for 20 years, and past-president of the National Farm and Garden Association, Royal Oak Branch.

Dr. Dolphe Martin has returned to Boston from the West Coast on his leading television program "Youth On Parade," sponsored by Mayor Hines and broadcast over WEEI-CBS. Dr. Martin's Choral Group, the Dolphins, are being featured.

Harold D. Mitchell lives in Buffalo and has his own business as manufacturer's agent for transmission machinery. His hobby is birds, on which subject he has become quite an authority, having written many articles and also presented lectures. He is now working on a comprehensive book, *Birds of the Niagara Frontier Region*. He showed some of his marvelous pictures at Harwichport. He is a member of the following organizations: American Ornithologists' Union, Wilson Ornithologists' Club, National Audubon Society, New York State Bird Clubs, Isaac Walton League.

J. H. Pratt has recently retired. The following has been relayed by the Chicago Ordnance District: "Colonel C. L. P. Medinnis, commanding officer, Chicago Ordnance District, U.S. Army, today announced the retirement of J. H. Pratt, 937 Fair Oakes Avenue, Oak Park, Ill. Mr. Pratt was born in Bridgewater, Mass., graduated from Massachusetts Institute of Technology, and in 1913 began his career as a junior engineer with the Liquid Carbonic Corporation. Because of his business acumen, his energetic approach to the complex problems of competition, he worked his way up through the ranks to become executive vice-president of the company.

In 1951, when the Korean situation was extremely serious and the procurement of Ordnance material urgently needed, Colonel John Slezak, former Under Secretary of the Army, persuaded Mr. Pratt to join Ordnance and serve in the capacity of small business specialist at the Chicago Ordnance District. Mr. Pratt developed

many sources among small businesses for the procurement of badly needed materials. In 1952, he was appointed special assistant to the commanding officer to deal with a wide variety of Ordnance problems. He soon won the respect of everyone in the District for his quick perception and unfailing good judgment. For the next four months, Mr. and Mrs. Pratt expect to be traveling through Europe. Mrs. Pratt is active in the world organization of the Girl Scouts." — FREDERICK J. SHEPARD, JR., Secretary, 31 Chestnut Street, Boston 8, Mass. C BOLMER VAUGHAN, Assistant Secretary, 455 W. 34th Street, New York City.

1913

Once again, we sit me down at our Royal and strive to give you '13'ers a monthly report of the accomplishments of our honored classmates; those who have retired; even the still industrious members; and the Age Center participants. We hope that the latest Russian astrophysical missile has aroused all of you to the point that you will come down out of the stratosphere and "Sit right down and write me a letter." Don't be a sputnick; a Russian moon; rocket; or even a cone. Yes, we are Moon-watching every day, watching the mailman for news from you. The giant computer has not time to tabulate the research of you '13 men but is working 24 hours a day trying to keep up with the speed of the Russian satellite. So we won't stop beeping until we hear from you.

Now for the News: Lester Gustin has again hit the jack pot in the newest co-operative apartment, "The Suncoast Towers" in St. Petersburg. This is a 35-unit apartment project which was organized and built; it was completed on March 1. The chairman of the Board of Directors, the organizer, president of the Building Committee is none other than our boy Gus. This beautiful apartment is owned free and clear by the duly incorporated group of leaseholders. Gus has written a rather lengthy letter describing the trials and tribulations which he and his associates experienced from March, 1955, when a parcel of land in St. Petersburg was purchased and construction supposedly started. The apartments were expected to be finished and ready for occupancy by November, 1955. After many delays in construction and the demise of the promoting company in August, 1956, a re-organized company took over and again our Lester was chosen president. He was able to obtain an option to purchase the building for \$5,000. All these adjustments necessitated Gustin's making several extra visits to St. Pete from Winchester, Mass. We quote in part Gus's letter: "Along in December (1956) it looked as though it might be necessary to take over the building, so we formed a company, Hed-Ake, Inc., for that purpose. However, we got things moving again, so actually Hed-Ake didn't take over until February. The building was finally completed and the general contractor paid off on March 14 of this year. Hed-Ake has turned over the building to the leaseholders; now we own the building outright, free and clear, and everybody seems to be happy." So now Gus's headaches are over. He adds:

"That's about all for now. Am looking forward to our 45th reunion and will be seeing you then, if not before."

Once again, our illustrious George Richter has been honored, and we quote from the *Transcript-Telegram* of Holyoke, Mass.: "Swedish University to Honor Ex-Holyoker. George A. Richter, formerly of this city and top authority on the use of cellulose in the paper industry, will be one of four persons to receive honorary doctor of technology degrees from the University of Goteborg, Sweden, on Saturday, May 11. The other three are prominent Swedish scientists. Mr. Richter, retired superintendent of the wood cellulose division, Kodak Park, Syracuse, N.Y., with about 400 patents to his credit and 60 published scientific papers, is now a consultant for the Defense Department and for the Central Intelligence Agency. Born in Holyoke, Mass., in 1890, Mr. Richter was graduated from Holyoke High School in the class of 1909, of which he was president, and from M.I.T. in 1913. One of the first four men in U.S. Army Chemical Warfare Service, established during World War I, he served as advisor on cellulose to the War Production Board and as a member of Scientific Research and Development during World War II. Before joining the Kodak firm, Richter was employed by Brown Bros., in Berlin, N.H., a paper concern. Mr. and Mrs. Richter, the former Edith Aldrich of Rochester, N.Y., will fly to Sweden on Tuesday, and following the awarding of the ring and hat at the ceremonies on Saturday, May 11, the couple will attend a banquet at the student Union of the University. Son of the late and Mrs. Richter of this city, Richter has two sisters in Holyoke now: Mrs. Archie F. Fletcher of 75 Hampshire Street, and Mrs. Bertram A. Woodruff of 136 Sargent Street. The Richters have one son, Alvin, in Pittsford, N.Y., which is where they also reside." George, the Class of 1913 extends to you its most heartfelt congratulations and we are all looking forward to seeing you and Edith at our 45th reunion in June, 1958.

One of our regular and loquacious correspondents, Allen Brewer, has written us a very interesting letter. Maurine and Allen are still dividing their home life between Florida and Texas. He reports that the Lone State has had a record rainfall in April — 12 inches — and in May about the same amount. How we in New England would have enjoyed sharing Texas' precipitation through our months of drought! Quote in part: "In April Maurine and I took a northern tour, so to speak, to attend the annual meeting of the American Society of Lubrication Engineers in Detroit. Went via the East Coast stopping off at Frederick, Md., to see one of our sons and his family. Then on to New York where I had a few business calls to make and to see the new Research Laboratories of the Texas Company. Next port of call was Mentor, Ohio, where we visited with son Gordon, who is with Shell Oil Co. Then on to Detroit for the meeting as stated. Made some good editorial contacts which will keep the typewriter busy for a while on some lubrication handbook work. On the way back to Texas we came via Mammoth Cave in Kentucky. While in that state we visited with the oldest

son, who has his art studio in Lexington. Needless to say he took us to the spring racing meet at Keeneland Race Track and the horses 'took' me in turn. I sure can't pick 'em." What a traveler you are, Allen. Shall expect to see you and Maurine at Oyster Harbors next June.

Again, we have the great pleasure of making an important announcement of honors conferred on our own Arthur W. Carpenter: "Arthur W. Carpenter of Akron, Ohio, consultant of rubber technology and former manager of the testing laboratories of the B. F. Goodrich Company, has won the 1957 Charles Goodyear Medal, highest honor in rubber chemistry, it is announced by Arthur E. Juve, chairman of the jury of award. The Goodyear Medal, commemorating Charles Goodyear's discovery of vulcanization in 1839, is conferred annually by the American Chemical Society's Division of Rubber Chemistry 'to stimulate interest in fundamental research in rubber and to honor those who have performed outstanding service to rubber science.' Mr. Carpenter will receive the award at the 132nd national meeting of the American Chemical Society in New York in September. . . . An outstanding authority in his field, Mr. Carpenter is well known in the rubber industry for his research and his important contributions to the development of scientific apparatus for testing rubber and rubber products. On loan to the government from Goodrich during World War II, the medalist served as consultant to the War Production Board and assistant director for raw materials of the National Security Resources Board. . . . On returning to industry after the war he received the N.S.R.B. Distinguished Service Award in recognition of his outstanding contributions to the work of the board and his devotion to the welfare of the country. Mr. Carpenter has been active in the administration and committee work of the American Society for Testing Materials since 1928, was president of the society in 1947. He has served as chairman or a member of more than 30 of the society's committees and subcommittees. . . . A rubber technologist and rubber compounding with the Goodyear Tire and Rubber Co. for six years, Mr. Carpenter was factory superintendent of the Holtite Manufacturing Co., Baltimore, before joining the Goodrich staff as a development engineer in 1927. He became manager of the Goodrich testing laboratories in 1928 and held that position until his retirement in 1955. Born in Wellsville, N.Y., in 1890, Mr. Carpenter was graduated from the Massachusetts Institute of Technology and received the master of science degree in chemical engineering there the following year. His first job was that of city chemist in charge of the water purification plant of Alliance, Ohio. After two years he became assistant superintendent of the Akron, Ohio, water purification plant, a position he held until joining the United States Army in 1918. In addition to being an active member of the American Chemical Society and the American Society for Testing Materials, Mr. Carpenter is a fellow of the American Institute of Chemists and a member of the American Chemical Engineers and the National Society of Professional Engineers.

The Division of Rubber Chemistry, with more than 2,500 member chemists and chemical engineers, is one of the largest of 21 scientific and technical divisions of the American Chemical Society." Well done, Arthur. We knew you when . . . Come to Oyster Harbors next June, and be just plain "Artie."

Your scribe has received a portion of the March issue of the *Outdoor Life*. This issue shows very graphically the joys of a pike fisherman in fishing and landing an 11-pound northern pike. Among the individuals observing the successful haul is none other than our classmate Dave Nason. The fishing party was held on Long-Legged Lake, 75 miles north from Kenora, Ontario. During a week of boating, there were a couple hundred pike caught and most of them released, with the top weight of 25 pounds. We will bet that Dave boated the big one, or that's what Dave's story will be when we meet him at our 45th.

Will our brothers ever stop receiving honors? Well, here is another recipient of national accolade. You all know him as Arthur Townsend, or Al, our famous storyteller. We quote: "To Arthur Lawrence Townsend, distinguished educator, administrator, and builder of young men—for excellence of his teaching, particularly in the field of mechanical engineering, throughout a period of nearly four decades; for his skillful, friendly, and eminently successful counseling of students on educational matters; for inspiring enthusiasm in his students to continue their education throughout life and become leaders in their chosen professions; for his steadfast devotion to the principles of moral integrity and intellectual honesty; for his continued championship of higher standards in technical education at all levels; for his early recognition of responsibility and need for development of technical institutes; and for his highly successful administration since 1944 as director of Lowell Institute School—this eighth annual James H. McGraw Award in Technical Institute Education is presented." This is a well deserved tribute and could not be said about a nicer fellow. We of 1913 are very proud of one of our former secretaries. Some of the highlights of Al's life and experiences will be briefly described as we knew and know him. Born in Boston on May 23, 1892, he received his S.B. degree from M.I.T. in 1913; began his professional career as engineering inspector for the Globe Indemnity Company; became New England inspector and chief engineer of the Massachusetts Bonding and Insurance Company; engaged in private technical editorial work and still serves book publishers as a consultant in the revision of technical textbooks. At the end of World War I Al embarked on a dual role in the field of technical education, and in 1919 he joined the staff at M.I.T. as an instructor in mechanical engineering and at the same time began a lifelong affiliation with Lowell Institute; was promoted to assistant professor in 1929 and associate professor in 1937 in the M.I.T. Department of Mechanical Engineering. After a quarter of a century of distinguished service at both M.I.T. and Lowell Institute, Al became acting director of the latter

institution in January, 1944; and in October, 1944, became permanent director. During World War II, Townsend was appointed executive secretary of the planning committee for all engineering, science, and management war training activities at M.I.T. He was named manager of the War Training Bureau; served as central agency for E.S.M.W.T. activities in all colleges in the metropolitan Boston area; received special mention for his unusually effective work in education for national defense from our beloved Karl Taylor Compton; was appointed to the M.I.T. Faculty Committee to study revision of postwar courses at the Institute. From his study with his associates many revisions were made at M.I.T. and later many of the modern technological ideas were introduced by him at Lowell Institute. Our Arthur Townsend was member and chairman of numerous committees of professional organizations including: American Association for the Advancement of Science; American Society for Metals; the Society of Automobile Engineers; American Society for Engineering Education. He is also the author of many articles on industrial safety and industrial education. As aptly stated in the announcement of the award: "He has been—and continues to be—a builder of young men." Al, we are in accord, and we know that all of your classmates share your honors with you.

The editors are anxiously waiting to receive our latest edition of "Cape-ends" column—So if you must be a satellite, just sputnick and send us your latest cone. Watch next month's column for news from Charlie Trull, Mark Reed, Al Butts, H. W. Wemple, and Johnny Welch. —GEORGE PHILIP CAPEN, *Secretary and Treasurer*, 60 Everett Street, Canton, Mass.

1914

The longer Ray MacCart has been retired, the more his activity increases. From World War I until 1940 he had remained in the Navy, then he retired as a commander. He then became a partner in a non-ferrous foundry, but with time to be a consultant to the Civil Aeronautics Board in the field of requirements for structural design features of international air worthiness. A side line in manufacturing petroleum burner equipment, together with work of the Chamber of Commerce Manufacturers' Council, occupied his spare time. This petroleum activity has increased so much that he has moved his home from Stamford, Conn., to Washington, D.C. Much of his activity takes him to Texas in connection with oil drilling. Frequent trips to Canada are also part of his program. For this travel he has a company plane. Ray ends by writing that he still hopes to find time to retire.

For many years Lyle M. Richardson has been associated with the Morton C. Tuttle Company, a very well-known New England construction company, where he has been vice-president and general manager. Last summer he moved up to the position of president.

Ralph D. Bates is also taking his retirement lightly. For many years he was a public health officer in New York State.

We now find him at the U. S. Embassy in Colombo, Ceylon, as a health advisor. He had previously made a visit as advisor to the National Ministry of Health in Iran.

While in Washington recently Norman MacLeod ran into Gardner Derry, who, it will be recalled, has retired as a vice-president of the Westinghouse Electric Corporation. Apparently "retirement" is only a title, because Gardner is very active in the Division of Construction and Supply of the Atomic Energy Commission.

Ray Dinsmore appeared for the October meeting of M.I.T. Trustees a bit out of breath. He had flown into Akron from Athens, Greece, gotten a clean shirt, and flown to Boston where he was delayed in landing by fog. Ray made up for his delay by a couple of his international stories. His visit to Athens was to deliver a paper at an international rubber conference.

It will be noted that there has been in the past a note regarding Bill Simpson's leaving New York and his purchase of a ranch in southern California. The reason for the move was to help the health of his wife. Unfortunately, after five years, his wife died. Bill then sold his ranch. Recently he has remarried and is now located with his new wife about 20 miles north of San Diego at Solana Beach, Calif. Bill says that the welcome sign is out to all '14 men.

After several years' illness and against a splendid fight Carroll C. Davis died on August 10. Davis joined the Boston Woven Hose and Rubber Company in Cambridge, Mass., immediately on graduation and remained with them until his death. He has been their chief chemist, and he had won national honors for his work in rubber chemistry. He had been the author of many papers. Davis prepared for Technology at the Boston English High School and had lived his whole life in greater Boston. He was married on October 24, 1917, to Caroline Sparrow, who, with two sons, survives him.

From C. C. Tai, the secretary of the M.I.T. Club of China, comes the sad word of the death of Chee-Sing Hsin on July 10 in Taipei, Taiwan. He had been, during his whole business life, a naval constructor for the Chinese Navy. Hsin had been general manager of the Northeastern Shipbuilding Bureau, and also of the Northeastern Union Navigation Bureau. He had also been a professor at the Ma-Wei Naval Academy and the Chung-Kou University. Honors had been awarded him by Generalissimo Chiang Kai-Shek. He leaves a widow and five children.

In the last month's notes reference was accidentally omitted that Herman Affel, our Class Agent, had been to Cambridge to take an active part in the Fund Agents' Conference. Remember all '14 contributions are counted towards our 50 year gift.

The Technology Club of New York has a special day for each class with a classmate responsible for that day. Our former assistant class secretary is our representative. George K. Perley of 9 Joel Place, Port Washington, Long Island, would be glad to have any inquiries regarding regular or special meetings. The meetings are held at the Hotel Biltmore, New York City. Our President, Charles P. Fiske, is always waiting to hear from you at Cold

Spring Farm, Star Route 3, Bath, Maine.
— H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass., Apartment 86a. HERMAN A. AFFEL, *Assistant Secretary and Class Agent*, 120 Woodland Avenue, Summit, N. J.

1915

For this month I wish all you classmates and your families a Happy Christmas Season with good cheer and good health in the coming year. We shall be looking for your thoughtful cards that always warm our hearts with nostalgic memories of fine old friendships.

This is a good chance to dwell on some of those cards from last year! Doug and Elizabeth Baker's took the form of a hand-drawn map showing the location of their farm in East Middlebury, Vt., where they have retired. Charlie and Bee Norton's, like so many old proud and boastful grandparents in our Class, is a family group picture with their two grandchildren taken on the steps of Charlie's ancestral homestead on Martha's Vineyard. Sam and Evelyn Berke have been busy building onto their already beautiful and spacious house at their farm in Lakeville, Conn. Sam is busy heading up a drive for friends for a local school. At his farm he has an extensive breeding program for Golden Guernsey cattle. A fascinating card, inscribed with Chinese characters printed in gold, brought us a faraway message from Pellian and Wanhwa Mar in Formosa.

On this bright, sunny October afternoon typical of New England's Indian Summer, the opening lines of Phil and Helen Alger's annual Christmas poem reminds us that the season is fast approaching again: "Silver feathers through the air jauntily are blowing, Whiteness all the hedgerows bare, Now it's really snowing." Ah, me! Ken and Esther Johnson, with inimitable humor, decorated a pretty card with the message: "The first order of business is to address several hundred Christmas cards and then return to write a few lines to old friends. That time has now arrived. First of all we hope Santa will be good to you — so get to bed early and hang up your socks. Esther and I are still chugging along; but each has leaky valves, gaskets, or other assorted ailments. Since I got out of the hospital have not smoked — so have saved enough this year to retire; but due to other factors I will continue to work, principally to eat, drink, and pay taxes." Ray and Mrs. Stringfield's card is a typical plug for California — a map of the state adorned with pretty scenes from the mountains and forests out there, with a big star indicating "It's Christmas in Los Angeles." (They never miss a chance, eh!) Ray wrote: "We celebrated our 40th wedding anniversary this fall, but Lucile doubts that she can stand 40 more years of living with a chemical engineer, although I've assured her it grows easier after that. Our three children's families with 10 grandchildren will be here for Christmas dinner, so the place will be jumping. We're fortunate to have them all close by, and Bob, our oldest, is now vice-president and secretary of Fullerton Manufacturing Company, taking most of the load off me so I can loaf. Best

regards and maybe will see you some time in 1957."

With some old reunion pictures for distribution to his Course IV gang of Whit Brown, Bill Spencer, and Everett Brigham, Chet Runels and Margaret wrote on their card from Lowell, Mass.: "I'm sorry to have missed the last few class dinners but was 'slightly under the weather' and have been taking it easy, or rather trying to. The 'old back porch' looks better than ever and hope that you and your wife will share it with us whenever the chance permits. We hope to have our whole family here for the Holidays, 17 including us." Alan Dana recently gave a paper on "Courses to be taken while pursuing college level studies" at a vocational guidance program in Ansonia, Conn.

What better close than this glowing tribute to our own Mary Plummer Rice in *San Francisco News* of March 11, headed in caps "Keeps Right on as Hospital Volunteer." It reads: "Marriage and subsequent mother- and grandmotherhood kept Mrs. Julian Rice of Tamalpais Valley from ever attaining her doctorate in research chemistry, but not out of hospital work. Her 2,000 hours of volunteer work at Marin General Hospital have just earned her a diamond-set gold pin, which was awarded her recently by Mrs. John Kyle, president of the hospital board of directors. Mrs. Rice gives five days a week to volunteer service — two at Marin and the other days at Letterman Army Hospital and the Public Health Department. Her help at Marin General, mostly in Central Supply, dates back to before the hospital actually opened. Although she had done a year's work toward her doctorate in chemistry at M.I.T. when she gave up her studies to marry, she has done professional work at Harriman Research Laboratory and Roosevelt Hospital in New York. She is the mother of four grown children, one of whom, Mrs. Gerhard Becker, lives next door to her in Tam Valley with her husband and their two daughters, Penny, 16, and Wendy, 10." Congratulations, Mary, for your splendid achievement and your unselfish and untiring work.

More notes like this require "Help . . ."
— AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

1916

Joe Barker continues in the news. We have a clipping back in July from the *Engineers News Supplement* in which Joe is quoted as saying: "Although routine engineers are a must in this technical civilization, creative engineers are the people needed to keep the United States technology in a top international position." Joe went on to define routine engineers and creative engineers. These definitions will be furnished on request. On October 2, Joe was the guest of Trans World Air Lines on the inaugural nonstop flight from New York City to Rome. He is cochairman of President Eisenhower's People to People Science and Engineering Committee and joined the group of chairmen who are making this inaugural flight. The group attended a seminar of European and American leaders interested in improving international relations on a

purely person-to-person basis. This meeting included a dinner at the Excelsior Hotel in Rome, the plans for which included his Royal Highness Prince Bernhard of the Netherlands as the principal speaker.

Steve Brophy and his retirement (chairman: Kenyon and Eckhardt) have been very much in the news this fall. We have received many clippings from many sources, all very high in the praise of both the man and his work. Late in September the *New York World Telegram* mentioned a "family send-off" in the Waldorf's Jansen suite for "recently retired Chairman D'Arcy Brophy." His successor, Ed Cox, spokesman for the K. and E. Board, tried a switch in giving the charming Mrs. Brophy, not her spouse, a gift. It was a charm bracelet adorned with representations of the outstanding events in Steve's colorful life as an ad man, charity and community leader. A small orchestra played appropriate music for each charm. We understand that for a while Steve will spend some time at his Pawling, N.Y., home with his three children and four grandchildren. Early in October we saw an announcement in a New York paper of the election of Steve as president of the Society for the Rehabilitation of the Facially Disfigured. We predict: his retirement will be busy!

Some time back, we had a fine letter from the new president of the Cleveland Engineering Society, a group of nearly 2,000 which includes all kinds of engineers, architects, and scientists in Cleveland. The president is Willard Brown!! He says: "A month or so ago we broke ground for the new Cleveland Engineering and Scientific Center, a \$1 million project. Badly needed by the various engineering and scientific groups of the area. It will be operated by the Cleveland Engineering Society. I am just about to take off for a week's trout fishing . . . of the kind Grandfather used to enjoy . . . far to the north of the Ottawa river in western Quebec, . . . actually leaving civilization at Deux Rivers, then crossing the river and on several hours to the north in the bush. Speckled squaretail Quebec trout are the only fish there, but what profusion!! The Club is one comprised entirely of Canadians, with an occasional American guest once in a while. Now have four grandchildren . . . ALL GIRLS! (two for my daughter, two for my son). Busy as usual, with the lighting business growing as it is." As many of you know and as stated in the publicity about Willard's new post in the Cleveland Engineering Society, Willard is manager of application engineering of the Large Lamp Division at General Electric's Nela Park. Was the national president of the Illuminating Engineering Society in 1941-42, and was for 12 years director of the International Secretariat on Lighting Practice of the U.S. National Committee of the International Commission on Illumination.

In the July issue we mentioned the interesting story we had received from Francis Stern about the trip he took a year ago. We covered part of the trip — through Norway, Sweden, and Denmark — but here's some of the material we held out for later issues: "We proceeded to Paris for a week end, primarily for the

purpose of picking up a French car which I had ordered in the States to be delivered to me upon my arrival there. I cannot be too enthusiastic about the roadability and performance of the Citroen II, for its front wheel drive, in spite of the absence of power steering, is the answer to the traveler's prayer when it comes to mountain roads and switchback curves. From Paris, we went north through Normandy, west through Brittany, down the coast of the Vendee, eastward along the valley of the Loire to the chateau district, where we roamed around for a week or more, revisiting many of the chateaux which we had seen before and going to some of the less famous ones for the first time. From there our way took us across central France, down to the valley of the Dordogne. That was the real objective of our trip through France, for I had long wanted to see the Caves of Lascaux and had picked the little village of Les Eyzie as headquarters. A more charming part of France is hard to imagine, and historically to go back 25,000 years, as do these caves, is an experience never to be forgotten. They were discovered not many years ago by three young men while out hunting, and when their dog disappeared through a hole in the ground, one of them dropped down through the opening and found himself in a cave of the Magdalenian period, the richest paleolithic culture era to have been found in Europe. Obviously the entire area has become a center for spelunks and the Government maintains a museum devoted entirely to spelean finds. Our trip proceeded from there down to Bayonne and we had several days in the Basque country along the Spanish border, from where we crossed southern France on a fabulous ride through the Pyrenees mountains over to the east coast of Montpellier on the Mediterranean side. Here again we visited the little towns and villages around the Spanish border before proceeding up into Provence where we spent 10 days in Villeneuve-les-Avignon and Aix-en-Provence. To speak of Arles, Nimes, as well as of many villages in that part of the country is to go back and relive some of the earliest Roman history and a great deal of French architecture. Our revisit to Marseilles barely afforded us time to eat the finest bouillabaisse I've had in years. We spent some very lovely days along the French Riviera before proceeding through Monaco, where we saw Her Royal Highness Grace's yacht; but unfortunately we were not invited in for either a trip or a meal! There's more to Francis' interesting account — really good stuff! — but we're going to save it for later. We've heard indirectly that Francis spent a week late this summer cruising Long Island Sound with a fraternity brother, Ben Munch'13, on the latter's beautiful boat *Benrue*.

Back in April we reported that E. McKendree Hayden, a vice-president of Stanley Chemical Company in East Berlin, Conn., had been made a special assistant to the president of the company in charge of new development. But at that time we didn't have the whole story, which subsequently came out in the newspapers. The papers point out that Hayden has for many years headed up the research pro-

gram of the Stanley Company, with whom he has been associated for 38 years. "Men in the plastisol field respect him as an authority. They read what he writes in trade journals and they listen to what he says, for his record shows he knows his business. He is a pioneer in plastisols and organisols. During World War II, he developed a plastic waterproof coating for cloth. The Army used it on the rain-coats it issued to servicemen and the plastic was named 'Haydenite' in his honor. While he was with the U.S. Bureau of Mines as a chemical engineer for part of World War I, he helped develop a poison gas. Later the Army commissioned him as a first lieutenant and put him in charge of building a plant to make the gas and then to direct its production."

Ed Williams favored us with a letter in June in which he wrote: "As a news source I am probably the least productive that you could find. I live in a small orbit that swings off Cape Cod only once a month when I go to Boston for a couple of days to attend our company's directors meeting. Most of our neighbors here are retired or soon to be retired and there are many with bass boats and consequently a lot of fishing. All in all this retirement life is not too bad."

Laurie Knowlton recently indicated that he had nothing of interest to report: "The same job in the company I have been with for 37 years — but now trying to put myself on the shelf to make way for others as I approach retirement. A place in the country that keeps me busy evenings and week ends and will give me something to do after retirement. Eight grandchildren, but living far enough away so that we seldom see them."

But we should add that these bits of information from many sources are the things that help to keep our column full.

Rudolph Gruber expressed regret at his inability to attend the reunion. Early this year he and his wife went by American President Liner to California via the Panama Canal. After a prolonged visit in Berkeley they drove back east by car. "We took it easy, and made stopovers in various spots in California, Arizona, Texas, Louisiana and the South. Fortunately, we escaped the tornadoes and rainstorms in that area. Our itinerary, incidentally, was almost the exact reverse of the trip from Boston to the Pacific Coast which I made after graduation in 1916, in my 1915 Model T. What changes, in roads and population-pattern these 40 years have wrought!" Rudolph retired in 1956 — had been a vice-president of Merck and Company for many years. He enclosed an article that he had published a few years ago giving a panoramic survey of therapeutic progress, and added: "Wonder what changes the decade 1950 to 1960 will bring?"

We were glad to receive a letter from Ernest Gagnon from Hurtsboro, Ala., where he says he has been living quietly since retirement at the end of 1952. Was 26 and a half years with Goodyear. He notes: "Usually in the winter, I make a trip or two down Florida way. I have been to Miami a couple of times and even as far as Key West (two days drive from here). Have also been to New Orleans, to Charleston, S.C., and to Massachusetts

twice late in the summer. About the only classmates I have seen are Flip Fleming and Ed Jenkins. Both have stopped here when passing through this part of the country. Hurtsboro is a small town between Columbus, Ga. (35 miles) and Montgomery, Ala. (60 miles) and any 16'er passing this way who would stop would be very welcome."

We recently got a pretty complete statement regarding the activities of one of our classmates who has gone in for the law — none other than E. Blythe Stason of Course VI and dean of the Law School at the University of Michigan since 1939. We don't normally give extended biographies of individuals, but the following is so unusual for an electrical engineer that we just can't resist the temptation. Here's the story: "Instructor, electrical engineering, University of Pennsylvania, 1916-1917; assistant professor of electrical engineering, University of Michigan, 1919-1922. Practiced law in Sioux City, Iowa, as member of firm of Stason and Stason, 1922-1924; professor of law, University of Michigan since 1924. Provost of the University, 1938-1944; dean of the Law School since 1939. Michigan commissioner, National Conference of Commissioners on Uniform State Laws; member, Board of Commissioners, State Bar of Michigan. Served in U.S. Army, 1917-1919, various grades up to and including captain. Member, American Bar Association; member, State Bar of Michigan (secretary and editor of Journal, 1929-1935); Council of Inter-American Bar Association; member, Attorney General's Committee on Administrative Procedure, 1939-1941; chairman, Michigan Commission on Anti-Subversives Legislation, 1951; consultant, President's Conference on Administrative Procedure, 1953; American Law Institute since 1938; elected member, Charter Revision Commission, Ann Arbor, 1953; chairman, Special Committee on Atomic Energy Law, American Bar Association; member, task force on legal services and procedure in the executive branch of the Government, 1954; managing director, Fund for Peaceful Atomic Development. Author: *Cases and Materials on Municipal Corporations*, 1935; *Cases and Materials on Administrative Tribunals*, 1937; and numerous articles in legal and other periodicals." How about that? It's certainly a record for 1916 to be proud of!

A letter from London in July brought an interesting account of Paul Page Austin, who in February, 1956, had gone over to England for the Bechtel Corp. (with whom he's been associated since 1942) on a two-year assignment. Paul's job was the design of a sea water pumping plant and distribution lines (capacity 100,000 gallons per minute) and the fire protection system for a steam power plant extension for an oil refinery in Kuwait (at the head of the Persian Gulf). He speaks with enthusiasm about his stay in London. He had always liked London and this was his wife's first trip abroad. He says: "To me London is a fascinating city. I love the architecture and there is so much going on. There are 50 theatres with legitimate plays, musicals, and vaudeville. There are two large exhibition buildings where trade shows — motor, machine tool,

construction machinery, electronics — are going on almost continuously. And there are so many buildings both in and out of London of historic interest, not to mention the beautiful gardens of some of the castles and estates." He and his wife had been to Paris several times and had spent a week in Belgium and Holland. He had had one trip out to Kuwait and three business trips to Italy — to Casale Monferrato, Milan and Genoa. On one trip he visited the "Ilalit" plant where asbestos-cement pipe and many other products of this material are made. "This was most interesting because this was where the making of this pipe was pioneered and developed by a man named Mazza, who died only last year at the age of 90. Johns Manville and all other makers of this pipe still pay royalty on the process developed here." When he wrote in July, Paul was expecting to return to San Francisco in a short while.

Your Secretary believes he reported a midnight visit with Murray Graff and wife Betty at the Stapleton Airfield late last spring, while passing through Denver from Albuquerque to New York. Anyhow, Murray has done what he agreed to do — send us a bit of a story for the column. Among other things he says: "Betty and I had coffee with Joe Barker last fall when the American Society of Mechanical Engineers was meeting in Denver, and it was nice to talk with Joe again. You know Joe and I belonged to a small club called Vectors when we were in Boston. As I remember, it was made up of seven electrochemicals and six electricals, with engineering and school topics prohibited at their meetings. . . . As you probably remember, most of my experience has been with electrical manufacturers, with emphasis on the selling angle. I spent ten years with Westinghouse followed by 26 years with General Electric. . . . On December 1, 1954, I reached the age of compulsory retirement from General Electric. I spent a couple of years, following retirement from G.E., in Safety Council work but resigned this position last December. Inasmuch as I have retired twice, I am now looking for another position, so that I may retire for a third time and then perhaps I will be willing to call it a day. I went to a Rocky Mountain M.I.T. Club meeting in Denver on June 20, and before I knew what was going on I was elected secretary-treasurer for the next year. We had a very interesting meeting with Don Severance of the M.I.T. Alumni Association and Joe Conrad, Regional Director of the M.I.T. Alumni Fund. Will have to get busy on this Alumni work." Murray also tells of a 6,600 mile automobile trip that he and Betty took in March and April, through Chicago to Tallahassee, New Orleans, Dallas, and home, stopping in Washington to advise their Congressmen. And early in September on a trip to the West Coast via Denver, your Secretary and his wife were met by Murray Graff and wife Betty at the Denver airport. Airplane not-on-times and schedules permitted a short period for exchanging the latest experiences. Just a short time before this, Murray had made good on his threat to take a third job by signing up with C. H. Hoper and Co., utilities engineers of Denver. When we met

Murray and Betty they had just come back from a day's touring of the mountain passes west of Denver. In Los Angeles a few days later we were met at the airport by Lewis Carman and his wife, had a delightful luncheon with them at the California Club, and were toted up to relatives in La Crescenta in the hills just north of L.A. While there we had a telephone conversation with Ken Sully who was in the midst of a vacation.

Back in August Harvey Stocking reported that he, too, had visited Lew Carman while on a three-week vacation in sunny Los Angeles. Harvey liked southern California and thinks he may go there when, as he says, he gets "past usefulness in this part of the country." He was visiting his nephew, an aeronautical engineer with North American, and wife. He says his nephew didn't graduate from Tech but from Michigan; but since his nephew met his wife there, Harvey felt that that was plenty of compensation.

A note from Jim Evans in late September says he ran into Del deLabarre in New York. "He is connected with a firm of consulting engineers — seems happy and very well. Regretted that he missed our dinner in New York in the spring." Jim also had lunch with Gil Gaus, who had just returned from a two-day session that covered the organization of the Alumni Fund drive. Gil represents New Jersey. Jim also reports that Moose Jewett was in Jersey but that Moose was completely mystified as to just how and where Jim learned that he was going to be at the airport in Newark on a particular day in September. They tried to meet but missed.

Hovey Freeman reports that his family had a very happy summer including the pleasure of having, at various times for stays of three weeks or longer, five of their married children and sixteen out of seventeen of their grandchildren. Their youngest son has been sailing around the world with his wife and some others, and early in October was in Genoa, having come through the China Sea, the Arabian Sea, and the Suez Canal without any difficulty. They were to start across the Atlantic the end of November and Mom and Pop are hoping to see them around the first of the year. On October 14 Hovey completed 25 years as president of the Manufacturers Mutual Fire Insurance Co., and you can imagine what a party was put on for him by the directors and officers. Congratulations, Hovey!! We understand the company has grown from having \$3 billion insurance in force to over \$17 billion, and assets from \$14 million to close to \$90 million. The adding machines most of us use don't have that kind of digits!

In concluding the notes for this time, we regret to report that we have had word of the death of George Repetti of Colorado Springs in June of 1956, and of Elie Boucher of Woonsocket last May.

And NOW, Ralph Fletcher, Joe Barker, Hovey Freeman, and all the members of the Executive Committee join me in extending best wishes for a Merry Christmas and a prosperous and healthy New Year!! — HAROLD F. DODGE, *Secretary*, Bell Telephone Laboratories, Incorporated, 463 West Street, New York 14, N. Y.

Since these notes will appear in the December issue, we wish to convey the heartiest of season's greeting to all members of the Class as they anticipate gathering with friends, children and grandchildren during the holiday period. And we hope that the new year will be filled with good luck and constructive and interesting projects whether in active business or in retirement.

Notice of the decease of three of our classmates has been received. Malcolm C. Brock (about whom we have heard very little since graduation) died on August 23; David M. Brown died on September 17. David was president of David M. Brown Bobbin Company, of Lawrence, Mass., and was prominent in the business and civic affairs of that city. Tom Meloy reports that Colonel John J. McCormick died of cancer in July, 1955.

Congratulations to Leo I. Dana, who, according to a news release of September 27, has been appointed vice-president of research and development of the Linde Company, a Division of Union Carbide Corporation. He was formerly vice-president of research, and joined the company in 1923.

Tom Meloy, whom, you will recall, was the very active and efficient chairman of The Class Records Committee which published the Class history on the occasion of our 30th reunion, was appointed regional Class vice-president for the Southeast Division, and in true Meloy form, immediately contacted all of the class members in his area. His efforts, which resulted in messages from a goodly number, are given below. Tom, who is president of Melpar, in Falls Church, Va., was persuaded to bring us up to date on his activities as follows: "Melpar continues to grow in spite of vicissitudes. We have upwards of 4,000 employees, with about 1000 assorted engineers and scientists. I am giving up farming and have acquired a small house with a minute plot of ground in Washington. My son, T. P. Meloy, after five years with General Electric, decided to go back to M.I.T. and find out something more. He is now enrolled as a graduate student with the general purpose of getting a doctorate in something to do with solid states. He was married in April and his wife is already a doctor, so that the general intelligence level of the new generations of the Meloy's undoubtedly will be raised. I suppose when you send announcements to them, they will all be addressed to Doctor and Doctress Meloy. The Regional Conference which M.I.T. is planning to have in Washington the first of March, will be well represented by our Class. I am, alas, chairman; Dad Wenzell, chairman of finances; and Dutch du Pont, chairman of invitations and special guests."

Allen F. Kingman, U.S. Army Retired, writes: "Flower gardening, profiting from the many benefits accruing to us town people in this attractive university town (Chapel Hill, N.C.), and traveling to our children and grandchildren and long time service friends, keep us fully occupied. In fact, I seem to have less spare time since my retirement in May, 1953, than I did while on active duty. That situation

makes for a most happy life." Vincent Panettiere reports: "Since 1954, until June of this year, I was chief engineer for the Visioneering Company, Incorporated of Sarasota, Fla. I came here from Stamford, Conn. to take charge of their engineering department. I am now 65 years old, so on the first of June I retired and am now taking life easy doing the things I always wanted to do. I have purchased a motor boat and go out on the Gulf quite often."

George Henderson is back in Washington now. He spent the summer in New Brunswick, Quebec and the Maritime Provinces. He is getting to be a very talented golfer at the Army-Navy Country Club. Elijah Levi wrote to Tom as follows: "I had hoped to get to Wentworth-by-the-Sea for this past 40th Class reunion and get reacquainted with our old-timers, but was unable to make it. Maybe one of these days I'll be able to do it. As regards Class notes, I am still on deck in the Bureau of Ships, Navy Department, in the Hull Design Branch, in charge of hull specifications for new construction and conversion of all types of combatant and non-combatant ships. Until their retirement, Charlie Gager and Frank Rizzo of our Class were here in the Bureau. Charlie retired several years ago, and Frank retired last year in bad health."

Norman B. Ames, who by the way is now Dr. Ames, writes: "I am back at George Washington University after a year as Fulbright lecturer in electrical engineering at the University of Ceylon, Colombo (1956-57). Also I made a quick trip to Rio to see my daughter and her family, and later visited fourteen leading engineering schools in the South. During 1956, I wound up the work for doctor of technical science at the Smis Institute of Technology, having spent 1951-52 in residence there." Duncan MacRae writes from Bel Air, Md.: "It is very pleasant to be the President of a Rotary Club and member of the Advisory Board of the Harford County Junior College which will open next fall. This, and a few articles on the teaching of thermodynamics which I have had published lately, make it possible to live in the country and still keep in touch with some progress." Duncan invites classmates to visit him at Bel Air. Frank (Dutch) du Pont writes: "My residence is Horn's Point Farm, Cambridge, Md., where I spend about half of my time. At the present time I serve as a consultant to the following engineering firms: Parsons Brinckerhoff; Hall and MacDonald, New York City; and Lockwood, Kessler and Bartlett, Incorporated, Syosset, N.Y. I am currently a member of the Highway Research Board, which is a division of the National Academy of Sciences. Finally, I am serving on three committees in Maryland: the Public Service Commission; the State Highway Program Review Committee; and the Self-Survey Committee, which is reviewing the number of agencies in the State of Maryland. I think this about covers the situation."

Dick Whitney has this to say about the reunion: "There is little in the way of news that I am able to submit for the Class notes other than to say that our 40th reunion was GREAT!! in all respects. I am glad that I was able to attend and

shall hope that I am able to do so when the 45th rolls around. Someone has said that the reason why he did not take his wife to his 40th reunion was so that when he returned home he would be able to tell her, 'I'm the only member of the Class who hasn't changed a bit.' Maybe that's why I didn't take Mrs. Whit. Life here in this small community (Redart, Va.) rolls along quietly. We are fortunate in having both of our daughters and their husbands living here in Mathews County, and to see our four grandchildren growing up, which they appear to be doing at a surprisingly rapid rate." Tom reports that Simpson R. Stribling is with ACF Industries, Incorporated, in Riverdale, Md., as assistant to the president of the Nuclear Products-Erco Division.

Here is a word from Noah Gokey: "This year marks the 40th anniversaries of the most important events in my life: joining the Navy, marrying Allene Shearman, and graduating from Course XIII. (Not necessarily in the order of importance.) Our one son graduated from the U.S. Naval Academy in 1946, married Anne Hubbard Mitchell, and is the father of our three grandchildren. He has his masters degree in electronic engineering and is now serving in the Engineering Corps at San Diego, Calif. After 33 years of active service in the Navy as a Naval Constructor, and four at Webb Institute of Naval Architecture as head of the Luckenbach Graduate School at Glen Cove, N.Y., I retired to our present home in Bay Colony on Crystal Lake where I find plenty of activity to keep both mind and body fully occupied." Dick Catlett has been going through, and surviving, considerable labor crises with the Catlett-Johnson Corporation. He writes: "After many years as a union shop, we have refused to sign the new contract which was offered by the union and as a consequence lost most of our men in the midst of the busiest season in air conditioning. I am happy to say that our new men, though less experienced than the ones we lost, are working together very well. I wonder why I didn't have the guts to make the move sooner. The only other news of note is that my daughter, who was married in April, 1956, has just presented me with my fifth grandchild, Martha Barton Ballard. Mother, child and grandfather are doing well."

Bill Bealer has remained a bachelor, and after practicing architecture for 30 years in Knoxville, Tenn., retired on January 1, 1954. He writes: "I live in Darien on the coast of Georgia, where I was born, in the old home of my father and mother. I live alone with Daniel, Lord Kelly, my Irish Setter. The days are not long enough in which to do all of the things that I plan for the day. I have many interests: gardening, flowers, fishing, woodworking, etc. I shall be glad to see any of my friends who may be passing this way. The town was settled in 1736 at the mouth of the Altamaha River, on Highway U.S. 17, 61 miles south of Savannah." Paul Bertelsen says nothing new has happened to him for some time. He is still mining and processing manganese ore. His address is Route 3, Charlottesville, Va. Ed Atkinson writes from Warwick Va., "I retired from the Regular Army after 30 years service,

which included duty in this country, and twice each in Hawaii and Europe in world wars one and two."

Frank Killorin sends this short message: "I retired from Teasill Manufacturing Company, on January 1, 1955, due to arthritis. We moved practically at once to Venice, Fla., built a home, and plan to stay indefinitely." The following from Jim Anderson: "I have been retired for the past five years and am living very happily in Fort Lauderdale. My only regret at the moment is that I didn't retire to Florida ten years sooner than I did."

Today's Best Smile: "Living in the past has one thing in its favor — it's cheaper." — W. I. McNEILL, Secretary, 14 Hillcrest Avenue, Summit, N.J. — STANLEY C. DUNNING, Assistant Secretary, 21 Washington Avenue, Cambridge 40, Mass.

1919

George Fleming writes from Washington, D.C. "Had to retire last October for total physical disability. Had been negotiating contracts for the past five years for the Navy. Tried surgery for a crippled lung last May and have been confined since to our apartment. But can report progress, slow but steady. Final results not known." You can be sure we are all pulling for you, George, and will hear of your continued improvement with considerable joy.

Jack Fleckenstein reports from Ionia, Mich.: "Not much news. Daughter Joan and her husband moved to Taft, Calif., earlier this month where her husband starts with Standard of California. He graduated last June in petroleum engineering from Colorado School of Mines. Joan resigned her position as geologist with British-American at Denver and may take up geology with some company in California although she hopes to have a grandson instead. Hope to see you all at the American Petroleum Institute in November at Chicago. Regards to all!"

Everett Doten says he had hoped to see more of us at the Alumni Day activities in June, but that about a dozen '19 men were in attendance. He continues: "Had various reports on the successful 40th reunion of the '17 class, and it brought to mind that we will have our 40th in only two years from now. Perhaps time to begin beating the drums pretty soon. Spent a few days on Cape Cod, and on return had my Chrysler transfer to our Missile Operation. And this should prove to be most interesting, as I have the whole thing to learn. Best wishes."

Donald Way, we heard recently, has been elected an assistant vice-president at Singer Sewing Machine Company. Congratulations, Don! We also heard that Bill Langille was the most enthusiastic rooter at the World Series games, but we don't know which side he rooted for — the winners, no doubt!

Please, boys, send in some news notes soon. — E. R. SMOLEY, Secretary, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

1920

Al Burke stopped in at my office, Nine Newbury Street, Boston, the other day

and I was able to show him the 3-D color slides I took at our last reunion. He agrees with me that any classmate who is in this vicinity might do well to take a peek at these. Certainly your aging Secretary would welcome a visit from you. Al's good, conscientious work as representative of the Class for the Alumni Fund has paid off in terms of our Class's standing. We don't rate anywhere near the top; but we have made a respectable showing since Al has been on the job, and he deserves full credit.

Igor Zavarine who was with Sylvania Electric Products Corp., Bayside, Long Island, has retired and taken up his residence in Belmont, Mass., address 62 Orchard Street. Johnnie Rockefeller is now in Milburn, N. J., address 56 Main Street.

As this is written, we are just about at the half way point between class reunions. I hope many of you are looking forward to our 40th as keenly as I am and are determined to help make it the best one yet. It does seem as if each one of our gatherings is better than the last. Let's try to keep it that way right through the 50th! With a reunion chairman like Buz Burroughs, a successful reunion is virtually assured. — HAROLD BUGBEE, Secretary, 7 Dartmouth Street, Winchester, Mass.

1921

Hola, Habana — Viene Veintiuno! From Friday, February 21, 1958, when we will arrive in Havana, Cuba, for the 36½ year reunion of the Class of 1921, through the following Monday, February 24, there will be one continual round of enjoyable informal events, interspersed with free time for sightseeing, all carefully planned to appeal to everyone. You now have the October broadcast letter to the Class from Assistant Class Secretary Ted Steffian, who is chairman of the Havana Reunion Committee, which includes Chick Dubé and Roy Hersum. Hope you returned to Ted the coupon attached to that letter and have indicated your interest in attending. If so, by now you will have received the succeeding letters which went only to those who did indicate interest, as explained in the October letter. If you have not received the later communications and would like to join the group, contact Ted at the address given at the bottom of this column and ask for last minute instructions. Meanwhile, go see your travel agent for transportation and hotel accommodations or get in touch with the carriers and hotels pronto.

Ted has sent us a couple of special delivery letters as these notes are being prepared, to give a resumé of the replies he has received in the first week after the October notice went in the mail. Considering this short time, the 1921 Week End in Havana is setting new records for popularity. In one week, mind you, 19 classmates have written that they will attend and will bring their wives. These initial replies are from Ollie Bardes, Mich Bawden, Cac Clarke, Harry Goodman, Munnie Hawes, Roy Hersum, Dug Jackson, Irv Jakobson, Bob Miller, Sam Moreton, Don Morse, Phil Nelles, George Owens, Helier Rodríguez, Fred Rowell, Ray St. Laurent,

George Schnitzler, Ted Steffian and Bill Wald. The original class broadcast, mailed about a year ago and asking for an indication of interest in a Havana week end, resulted in enthusiastic replies from some 90 members of the Class. With 19 affirmative answers within a week of the October letter, the "Pearl of the Antilles" will see a goodly portion of that original large group; and we hope you will be one of them. Act now, if you haven't already done so, to insure a place at this once-in-a-lifetime experience. Write to Ted Steffian.

Class President Ray St. Laurent has, as usual, been most active in furthering all class affairs, in addition to his heavy M.I.T. and business duties. Copies of his recent correspondence reveal a discussion of 1921 matters with Jack Barriger in Pittsburgh. We are all pleased to know that Jack will undertake to serve with Mich Bawden on the Class Special Gifts Committee, despite Jack's exacting schedule as president of the Pittsburgh and Lake Erie Railroad Company. Ray and Class Agent Ed Farnard have been analyzing the annual class giving to the Amity Fund. You have the recently mailed report of the Fund, which we will review in next month's notes. To Ed, we all express most sincere thanks for his excellent handling of a most difficult assignment and to you, dear reader, go everyone's thanks for helping him. Ray had the opportunity to advise Bill Sherry, "Mr. M.I.T. of Oklahoma," of the award of the Bronze Beaver to the M.I.T. Club of Oklahoma by the Alumni Association for an outstanding M.I.T. regional meeting. In response, Bill writes he has presented the citation to the members of the Club. He adds that our honorary member of the Class, young Billy, has returned to Notre Dame for his third year and is considering attending the Sloan School of Industrial Management at Technology upon graduation. Bill and Helen's three granddaughters and two grandsons are all in St. Louis, now that daughter Mary's husband is out of the Air Force and back at St. Louis University for two years of orthodontics.

Ted Steffian is another busy man who carries on many extracurricular activities. A recent newspaper article reveals that he has agreed to serve as section chairman in the construction division of Boston's United Fund campaign this fall. Ted is also a director of the Cambridge Center for Adult Education. In whatever spare time may be left after he takes care of the myriad of details of the coming 1921 Week End in Havana, Ted runs the affairs of his prominent Boston architectural firm. On the subject of Bronze Beaver awards, we were happy to join Sumner Hayward and Joe Wenick in welcoming Technology's beloved President, Jim Killian '26, to the fall meeting of the M.I.T. Club of Northern New Jersey and to learn that the Club's distinguished background had been recognized by a Beaver award citation. Joe is currently the treasurer and there have been many other classmates who have also had important parts organizing and shaping the Club during its 22 years of service to local Alumni.

Arthur E. Raymond, vice-president in charge of engineering of the Douglas Aircraft Company, Santa Barbara, Calif., has

been honored with the award of the 1957 Daniel Guggenheim Medal for notable achievements in the advance of aeronautics. The announcement was made by Edward P. Warner '17, chairman of the award committee. The medal will be presented at a dinner in New York next month and by our own S. Paul Johnston, Executive Secretary of the Institute of the Aeronautical Sciences. Charles W. Maloney has been appointed chief electrical engineer of Stone and Webster Engineering Corporation, with whom he has been associated for 30 years in various engineering projects for utilities and industrial organizations all over the world.

Albert E. Bachmann, president of the Mississiquoi Corporation, Sheldon Springs, Vt., has also been honored by his election as president of the American Pulp and Paper Mill Superintendents Association, for which he had been serving as vice-president. Paul L. Hanson, formerly of Minneapolis, heads the new Atlanta, Ga., distributing branch of Schaefer, Inc., Minneapolis cabinet manufacturer, to serve the procurement of ice cream cabinets by firms in the Southeast.

Roderick K. Eskew was honored at ceremonies in Washington, D.C., with the Superior Service Award, the top recognition of the U.S. Department of Agriculture, for "outstanding initiative and leadership in the organization and development of new processes and products which have resulted in increased utilization of agricultural products." Rod is the engineering head of the Wyndwood Laboratory of the Eastern Utilization Research and Development Division in Philadelphia, Pa. He directed the pioneering work on the first commercially successful process for recovery of fruit juice flavors in concentrated form; and his group also developed a continuous process for making powdered deciduous fruit juices, requiring no refrigeration. The new and popular potato flakes originated under his guidance and he is now at work on a dried whole milk which will instantly disperse in water and have a fresh milk flavor. Rod came to his present work in 1940 from the Tubize-Chatillon Company, of which he was assistant chief chemist. Previously, he had been with Hercules Powder, Du Pont, and the Brown Company.

Ivan C. Lawrence reports he has left his summer quarters in Detroit Lakes, Minn., and again receives his mail at Twin Shores, Longboat Key, Sarasota, Fla. After many years on the post at Ft. Dix, N.J., Colonel William C. Ready has a new home at 1408 Stanley Drive, Verona, Pa. Harold F. Stose reports he is living at 12 Lakewood Road, Natick, Mass. Mrs. Charles MacKinnon of Plymouth, Mass., has written to your Secretary, expressing her appreciation for the sympathy extended by the Class on Charlie's untimely passing last May. She adds: "It was Charles' wish to attend the reunion last June, but he was suddenly taken ill in the latter part of April and was in the hospital for two weeks before he slipped away. The day before, we observed our 26th wedding anniversary. My daughter, Ellen, joins me in thanks for being so considerate."

It is with deepest regret that we record the passing of James Hoy Lawson of Concord, Calif., on September 16, 1957. Born

on July 4, 1886, he prepared for Technology at Oberlin College and Cornell University and joined us in the senior year. He was graduated with the Class in Course IX-B. For many years he had been engaged in business in Pasumalai, Madura District, South India, and came to California to live on his retirement. On behalf of the entire Class, sincere sympathy is extended to his family.

Hola Habana — Viene Veintuno! And we all hope you will be there to take part in the festivities. Meanwhile, the best of Season's Greetings from all of your class officers and committeemen. — CAROLE A. CLARKE, *Secretary*, I. T. and T. Components Division, 100 Kingsland Road, Clifton, N.J. EDWIN T. STEFFIAN, *Assistant Secretary and Chairman, Havana Reunion Committee*, 11 Beacon Street, Boston 8, Mass.

1922

Since these notes are being prepared on October 11, we hope that they reach you in time to urge attendance at the Silver Stein Award Dinner of the M.I.T. Club of New York on November 18 at the Hotel Biltmore. Our newly elected and now famous C. George Dandrow will be honored as having made an outstanding contribution to the Club and the Institute. We are happy for George and bask in his reflected glory to the Class of '22. Although Sam Reynolds has been active in local M.I.T. affairs wherever he has been located, for one reason or another he has not been able to be at too many of our class affairs. Currently, Sam is living at 785 Park Avenue here in New York City and walks to his office at 47th Street and Fifth Avenue. This should help on his weight control plans. Further, and most importantly, his wife, Elizabeth, enjoys New York because of her ready access to her many interests in her academic and art fields. Sam's son, Clarke, with his wife and two children are living in Niagara Falls, where he is a salesman with Sam's old company, the Crucible Steel Company. On the business front, Sam reports substantial growth on the sale of graphite, which is his interest with the Great Lakes Carbon Corp. (800 per cent increase over the past eight years since Sam has been with them!) The picture ahead is one of expansion, and we have all read about the important niche that graphite has in the construction of atomic reactors for nuclear power. Sam is currently a director of the M.I.T. Club of New York, which is now in a new location at the Biltmore Hotel in New York.

Karl L. Wildes was appointed chairman of the members-for-life fund committee of the world-wide engineering society, the American Institute of Electrical Engineers. Professor Wildes first joined the M.I.T. faculty as an instructor in mathematics in 1920 and became an assistant professor in 1935. He served as guest professor in electrical engineering at Tsing-Hua University, Peiping, China in 1937. He has authored many articles for scientific and engineering journals. George Dandrow says that he ran into Joe Givner in one of Albany's nice eating places. Joe had as guests a few of the merchandising bigwigs involved in the new and large Grand-Way

Merchandising Center in Albany. Joe is living with his wife and two children at Amityville, Long Island, and is maintaining a further point of operation at Arcola Lodge, Paramus, N.J. Since graduation, Joe has applied his Course XV background in the field of merchandising, where he has held important posts as vice-president of Saks Fifth Avenue, president of R. H. Macy Purchasing Co., vice-president of Real Silk Hosiery; he also sandwiched in an important post on the development of the plans and the carry-through on the original Sears Roebuck program for retail outlets throughout the country. For some little time past, he has been a consultant in the field of merchandising.

Walter E. Lennon was given a dinner and presented a wrist watch in recognition of 35 years of service as technical director of the L. L. Brown Paper Company. He has taken an active part in community work in Adams, Massachusetts, as a trustee of the W. B. Plunkett Memorial Hospital and a member of the Forest Park Country Club.

Latimer Farrington Hickernell has been receiving many headlines lately and your Secretary has been receiving many excerpts from items telling of his treasurer-ship of the American Institute of Electrical Engineers. A new honor is that he has been suggested as president for the year 1958-59. In our last notes we told you of his appointment as vice-president—Engineering of Anaconda Wire and Cable Company. The fact that he spent time at Grinnell College, Iowa, your Secretary's home state, brings about an earnest request for a vote early and often for the future president of A.I.E.E. Francis M. Kurtz, coffee expert of New York, is pictured in the *Boston Daily Globe* of September 10 as a panel leader considering investment of foreign capital in Colombia. He is former chairman of the American Coffee Corp. Mr. Kurtz outlined how the financial situation in Colombia is affected by the export of coffee, its main product. He termed it the greatest attraction to American businessmen seeking to make investments in the free market for exchange.

We have new addresses as follows: Earl T. Heitschmidt, 2010 Wilshire Boulevard, Los Angeles 57, Calif.; Richards J. Bard, Standard-Vacuum Oil Company, P.O. Box #1000, White Plains, N. Y. C. George Dandrow made a big hit in Buffalo on September 20 by appearing before the New York State Association of Architects as the convention banquet speaker. His talk, entitled "Architects Are Citizens, Too" received most favorable press notices and even a complimentary letter to your Secretary applicable to the Class of '22. George is certainly a natural as vice-president for customer relations. Hope he comes back to Buffalo soon. If you have received the annual report of the M.I.T. Alumni Fund for the year 1957, bust out the buttons of your vest by reading in the record our Class results for 1957 and for the total gift since the start of the Alumni Fund. We are at the top but propose going still higher in the 1958 campaign. — WHITWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo 3, N. Y. C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Sales Corporation, 22 East 40th Street, New York 16, N. Y.

1923

By the time you read these notes you will have received a progress letter giving further information about our 35th reunion to be held at The Pines, Cotuit, Mass., June 13-15, 1958. On September 21, Penn Howland and his committee had a meeting at the Pillar House, West Newton, Mass., where preliminary plans were formulated. There were 14 of us present, a fact which augurs well for a big get-together next spring. You will be kept informed through these notes and through three or four additional mailings.

Joseph H. Cox, VI, presently engineering manager of the Westinghouse Plant at Sunnyvale, Calif., has been raised to the grade of fellow in the American Institute of Electrical Engineers. He joined Westinghouse in 1924 and has served that organization in various capacities for 33 years. He is the holder of 24 patents and the author of numerous technical articles.

Bertrand A. Landry, X, has been named assistant technical director of the Battelle Memorial Institute in recognition for the work he has done in the field of combustion and energy. For the past three years he has been in charge of the company's office in Paris, France. He is also editor of the Air Force Monograph on Injection and Combustion of Liquid Fuels and is active in the work of the American Institute of Chemical Engineers, Society of Mechanical Engineers, and Society for Testing Materials.

Robert Hill Kean, X, has been selected by the Virginia Section of the American Chemical Society as recipient of the 1957 Distinguished Service Award in recognition of his outstanding contribution to the professional standing of chemists. Formerly with the Virginia-Carolina Chemical Corp., Bob is now retired and is taking things easy (more or less) in a consulting capacity.

Edward J. Healy, IX, has been elected vice-president of construction of The Kuljian Corp., Philadelphia engineers and constructors. He is a member of the American Society of Mechanical Engineers and the National Society of Professional Engineers.

Walter F. Munford, II, is now assistant executive vice-president of operations, United States Steel Corp. at Pittsburgh. He challenges all Cape Cod vacationers to visit him at Chatham and boast about grandchildren — he has six.

Jack Beretta, IV, president of the First National Bank of San Antonio, Texas, paid your Scribe a visit when passing through White Plains last summer. Of course that was the week end we were visiting Cape Cod — sorry, Jack!

David J. Flesh, III, wrote in from Jefferson, Texas, where he is a consulting geologist and engineer, principally for oil companies, and loves his work! He also loves to fish, hunt and enjoy the great outdoors.

A beautifully engraved card arrived, announcing the marriage of Mrs. Helen Beatty and our beloved treasurer, Lyman Lord Tremaine, on September 21. Week-days they spend in New York City and week ends in Westfield, New Jersey. Congratulations and best wishes from the Class, Helen and Lem!

Stephen R. Kiehel, X, received considerable publicity in Cleveland newspapers a few months ago by "Water Witching" underground wells with 85 per cent accuracy. As president of the Citrox Laboratories, Inc., he claims to be able to locate buried metal deposits as well as underground water supplies. In New Hampshire we call it "dowsing" and it works there, too — sometimes!

Your Scribe made a tap recording of the Russian satellite as it passed over the New York area, October 7.

Be sure to start saving now for the reunion next June 13-15. The Pines is a splendid summer hotel — the location is ideal and the company will be excellent! What more do you want, — except to be there? — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 N. Broadway, White Plains, N.Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

1924

Sorry to have missed up on last month's issue. Combination of circumstances which, with luck, will not be repeated. So far President Littlefield hasn't named a replacement (he hasn't seen the November issue as this is written) so, assuming your secretary still has a job, here goes.

One thing is for sure, the slip-up was not because of lack of news. Matter of fact, there's so much we won't attempt to get it all in at once. The summer brought plenty of news, both good and bad. Let's start where we left off, with Alumni Day. An eminently successful day all around, with a good turnout from '24. From incomplete notes, here's the way it looked. The Frank Barretts, Phil Cohens, and Frank Shaws were there. The Cohens had just returned from the Caribbean. A card from the Caribe Hilton said, "phoned Luis Ferré at Ponce — a man of affluence (he should also have added, influence). He was away at Washington, D.C." The Henningsers got back from Florida in time. Spring stay-at-homes included the Reg Miners, the Neitlichs, Herb Stewarts, and your Secretary and Mrs. Kane. From California came Phil and Mrs. Bates, on east to see another son graduate. Pret Littlefield, Ray Lehrer, Nate Schooler, Cy Duevel, and Dick Walker came on their own, for a variety of reasons. So did Avery Ashdown, who has never had to account for a feminine companion, or lack of same.

Ave, by the way, who has been on the M.I.T. Faculty since 1924, retired this June. He came to take graduate work after getting his bachelor's at the University of Rochester. For long years he took no part in class affairs: "After all, I was just a graduate student. I feel like an old man beside you kids." Then, at one dinner he showed up and said: "Much to my amazement, I don't feel so old any more." Ave had been Faculty Resident of Graduate House for (?) years — a long time. He was known and loved by generations of graduate students.

So much for Alumni Day. Now let's see what you have been doing in a business way. Last spring Nate Schooler proudly (and understandably so) sent out announcements that the Flush-Metal Parti-

tion Corp. had a new assistant to the president in the person of Jerome Philip Schooler '55. Jerry is known to many of us. After Colgate he came to M.I.T., then the Air Force got him. For two years he was a project engineer at Wright Field. Now he joins his father in a business which he has built from the ground up. You could do something here with "partitions in the second generation" — but your Secretary is not up to it at the moment. Try it yourself. No prizes.

Do you remember the story of Franklin O. Billings, your classmate who retired and then went back to school? He was a bit perturbed before the fact, but soon found himself completely at home. Last June Frank Billings, World War I veteran, retired from government service in 1955, got his bachelor's degree from the University of Washington. He is bubbling over with ideas for the future.

Dr. Anatole R. Gruher, Polytechnic Institute of Brooklyn department head, has been honored with election to the high post of fellow of the American Institute of Electrical Engineers. Here's something you probably didn't know. Anatole came to M.I.T. as a transfer from the Eidgenössische Technische Hochschule ("Polytechnicum") in Zurich.

H. Royce Greatwood, after a lifetime in China, Ceylon, Japan, and other points east, retired to a lemon grove in California. This we've told you before. Now retirement palls. Royce has gone back into business in San Francisco under the firm name of California Greatwood, Inc., "consultants, purchaser and distributor of overseas products." (advertisement) He is not concerned merely with cameras, toys, *et alii*. This fall he came back to M.I.T. for a few days to get a grounding on nuclear reactors — one of his new interests. Royce's office on Montgomery Street, by the way, is just across the street from Rock Hereford, steel man.

A colorful collection of post cards from Hank Simonds shows he has been in Ryukyu (there are lots of Japanese heiroglyphics that probably tell what that one was all about), Singapore (snake-charmers), and Iskenderon, Turkey, "on the road from Antioch to Tarsus over which the first disciples passed." A card from your President in August was somewhat less exotic. He was anchored in front of the Oyster Harbors Club on Cape Cod, probably with all his bamboo seagull scarers in place. "Will go to the club for dinner and report on the drinks and food later. Might even pick out my room." This is two months later and still no report. Don't know whether he found our 35th reunion spot to his liking or not.

An oversize Hoffmann-LaRoche publicity blurb of what was probably a sales convention, entirely pictorial, has several shots of their Vitamin Division "veep," Paul J. Cardinal. Smiling, exhorting, storytelling, glass-in-hand, they're all our Paul. Incidentally, there's a ringer in this sheet. Page two shows a close-up of a shining pate with a question mark superimposed. Turns out to be a northwest view of Bill MacCallum. That MacCallum — he's everywhere! Our own V.P. (Metropolitan New York) as well, Paul has the Class off on a merry round this year. Item one is a series of monthly class luncheons at the

N.Y. Club's new Hotel Biltmore quarters. If you're in New York "the Wednesday of the second full week of each month" stop in.

In May the Reverend Gertrude G. Harris, pastor of the Methodist Church of Phillips, Maine, spoke to the annual convention of the Maine Federation of Business and Professional Women's Clubs, Inc., in Rockland. Don't know what she said or whether there was any connection, but a few weeks later she moved to Greenville Junction. Good fishing country around there. Any of you fellows get up that way, drop in on one of Gertrude's Sunday services. By the way a news report said that Gertrude had been a minister for 11 years and before that a professional engineer for 40 years. That's a neat trick, 51 years work only 33 years after college!

As we said, not all the news is good. For some time George DiSomma's heart has been so bad that he had to quit work. He had been recuperating in Florida for many months. In September, feeling much better, he went on a deep sea fishing trip. It was an exciting one, too exciting, and George had another and fatal attack. The sympathy of the entire class was extended to Mrs. DiSomma by six members of the Class who attended the services. George was one of our most regular attendants at all manner of class affairs. He will be missed.

Two other classmates have passed away recently but no details are available. In the winter Charles F. Ramseyer died in New York; in May, Robert S. Wertheimer in Longview, Wash. Bob had been an invalid for many years. Our sincere sympathies go to their families.

Paul Keppler has finally completed his tour of duty in Korea setting up power plants, is now back in Helper, Utah. "Still with Bechtel Corp. of San Francisco in Power Division. Putting Unit Number 2 into service here for Utah Power and Light Co., Carbon Station located at Castle Gate, Utah."

Through the years Wink Quarles had made it a point to attend every Alumni Day dinner he possibly could. As a consequence he had amassed an outstanding collection of commemorative steins. Last spring his widow presented the entire collection to the N.Y. Club. Now that these steins are no longer produced they are rapidly becoming collector's items. Mrs. Quarles's thoughtfulness was greatly appreciated.

You probably noted those Canada Dry contest ads this summer showing a gleeful lady shoveling a pile of silver dollars. Sounded like a Littlefield brainchild, "First Prize — All the silver dollars you can shovel in 5 minutes." Frank O'Neil wrote Pret, suggesting he flood '24 with contest blanks. "Would help '24 if one of us won and split with M.I.T." No blanks were forthcoming, however, and the closing date was September, so we'll never have a chance now. Whatever happens to these contests, anyhow? Who was the lady who won and how much dough did she shovel? They never tell you these things. And did financial V.P. Littlefield glue that pile of dollars together first, or nail them to the floor? Maybe some day we'll find out.

Hope you had a good Thanksgiving,

that your Christmas will be merry, and that the year ahead will be all that you hope for it. Until next year, then.—HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

Some news items have reached your Secretary during the past weeks which cover matters which took place several months ago but which are probably of interest even at this late date.

James G. Creveling, Course XII, one of the few geologists in the Class of 1925, has followed mining since his graduation and has recently been promoted from general superintendent of coal mines for U.S. Steel's Tennessee Coal and Iron Division to assistant manager of raw materials. He has held many positions with mining concerns in Mexico, Bolivia, and various parts of the United States, and has been with U.S. Steel for the past several years.

E. Willard Gardiner, Course IX-B, who has served as industrial engineer and manager of the Methods Division of Sears Roebuck for the past 25 years, spoke recently at a meeting of the Western Massachusetts Society for Quality Control on the subject, "Administrative Application in the Mail Order Business."

Another classmate, Charles E. Knight, Course II, recently served as moderator of a panel held at Springfield College in Springfield, Mass. The subject of the panel discussion was "Automation—Its Impact on Our Society." Mr. Knight is presently general superintendent in charge of engineering and manufacturing services for the Monsanto Chemical Company, with whom he has been affiliated since 1936.

Eugene C. Hermann, Course X, was honored by Esso Research and Engineering Company as he marked his 30th anniversary with the company last June. Gene, who was referred to as a world traveler, is assistant manager of Esso Research's refinery liaison unit, and in the last year has made four business trips to South America, three to Canada, plus numerous trips throughout the United States.

During the summer, a card was received from Tony Lauria. The card came from Spain and indicated that Tony, with his wife and son Larry, were visiting Portugal, Spain, and Italy. He has now prepared a most complete story of his trip which I am sure all members of the Class will find worth reading, but I hesitate to ask The Review to publish it in the class notes. Tony has made a number of trips to South America, having of course lived there for a number of years; and he has now decided that he will concentrate on various parts of Europe over the next several years. He left New York on June 16 and flew to Lisbon, Portugal. From there, he took in many side trips in the limited time available before going on to Madrid, from which point he took in many points of interest including, of course, the Alhambra. After his tour of Spain, he flew from Barcelona to Nice on the French Riviera; and while in that area had the opportunity to celebrate the Fourth of July by visiting the flagship of

the U.S. Navy's Sixth Fleet. From there, it was on to Rome, the Vatican, and Venice. Tony took a good many colored pictures on his trip; and I recommend that if any of you are visiting Chicago, you get in touch with him and get all of the details.—F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge, Mass.

1926

We had visitors yesterday afternoon and I regret that I did not return home soon enough to see them. Larry Randall and his wife were spending a fall vacation in New England and dropped by Pigeon Cove. (Larry is with Goodyear in Akron, Ohio.) They had stopped at the yacht club hoping to find me there and to see the *Flying Cloud*, but I was roaming around trying to find a winter home for the boat and it took all afternoon to work out a deal. A Star boat can fit in a two-car garage kitty-cornered, but all my friends with summer houses have their garages full of porch furniture and other junk. I found a real friend, however, who had an old garage that was too short and he suggested sawing a hole in the back so the bow could stick out through it. That is this morning's project and I am meeting a carpenter shortly who will help me get the four-foot square hole located properly and then figure out a method of covering the exposed bow. One wit has suggested sawing a few feet off the bow and mounting it over the living room fireplace. That is a rather wordy explanation of why I didn't see the Larry Randalls, but I promise to look them up the next time I visit Akron.

Do you remember the return post cards we sent out a year ago? They still keep turning up, one came the other day from Howard Humphrey—where had you been hiding the card Howard? But thanks much for sending it along. Here is Howard's message to the Class: "Just returned from New England but unfortunately we did not have time to continue on route 128 to Gloucester for a call at Pigeon Cove. Our destination was again Bowdoin College where David registered as a freshman. John graduated from Bowdoin in June, and he is now studying for his master's in chemistry at the University of Delaware. Bobby trails quite a bit behind, in the fifth grade of elementary school. My assignment with Du Pont is still in industrial relations in Wilmington. Outside I still spend a good bit of time with the Boy Scouts, having just completed a three-year term as a district chairman. Best regards, Howard Humphrey." This is an opportune time to mention the return post cards. They worked wonderfully and we still have material to report from the previous cards; but we do not plan another mailing for some time since Pink Salmon had to reduce the class treasury by \$25 to cover the last one. You can accomplish the same thing by addressing a two-penny post card to your Secretary either at the address below or at P.O. Box 327 Pigeon Cove, Mass. (we catch up with the mail at Pigeon Cove every week end). Why not address the post card now and carry it in your pocket until you are inspired?

Speaking of getting inspired—Whit

Ashbridge is on the top of the inspiration list as you know from his past letters which have usually been copies of "dear family" epistles. This one, though is to us, and we will quote from it: "On board the S. S. *Sta Rose* approaching Curacao. Dear George: After 10 years in Venezuela we are returning to the States with the idea of settling somewhere in the Southwest. We spent the summer at a dude ranch in Montana on the western edge of Glacier National Park—wonderful scenery, horseback riding, and fishing. I caught a 26½ inch trout which was greatly enjoyed by all five of us. Then I took the two boys on a caribou hunting trip to Alaska. I shot two; Dick, the oldest of our children, shot one; and John was just along for the ride, being a bit young to shoot anything bigger than his .22. We put the two younger ones in school in Tucson, Ariz. (John and Ann Maria), and Dick returned to St. Andrew's School, Middletown, Del., while my wife and I returned to Venezuela for a month to pack. Now we are en route to Philadelphia; and after about a week there seeing our families my wife and I take off for a couple of months in Europe, returning in time for the Christmas holidays in Tucson, where we plan a family get-together. After that my wife and I will seriously look for a place in the West to settle. Sorry we plan to end up so far from Pigeon Cove! I'll let you know when and where we eventually decide to settle. Best regards to you and all the '26'ers. Sincerely, Whitney Ashbridge." Whit's program sounds most interesting, and while he studiously avoids the word it sounds as though he plans to retire. We will be interested in hearing where this spot is that he finds in the Southwest. The climate sounds appealing but is there any place to sail a boat? Also what does Whit mean by settling. I'll wager he will continue to make little 5,000 mile sorties from this little spot in the Southwest. We see that it is nearly time to meet our carpenter and saw the hole in my friend's garage, so with one more quick note we will rush off. We met Flint Taylor momentarily while dashing for a train recently and he was the picture of health—you may recall that he spent a long period in a sanatorium and upon returning home fell off a step ladder. The other day he was on his way to a week end with Bud Wilbur at Bud's new place in Hancock, N.H.

I believe this is the issue that gets published in December, so—pleasant holidays to all. We will be thinking of you in front of our hearth at Pigeon Cove. Don't forget the two-penny post card mentioned above.—GEORGE WARREN SMITH, *General Secretary*, E. I. du Pont de Nemours and Company., Elastomers Department, 140 Federal Street, Boston 10, Mass.

1928

Last month we failed to get in a report on the very fine Alumni Day gathering of '28 men; but better late than never, so here it is! Including wives we counted 34 seated for dinner in Rockwell Cage at the tables reserved for '28. Those present were: Bill Carlisle, Jack Chamberlain,

Mary and Dud Collier, Barbara and Joe Collins, Alexander Daytz, Dave Donovan, Frances and Jim Donovan, Helen and Roland Earle, Dorothy and Carney Goldberg, Ethel and Thurston Hartwell, Walter Hildick, Angelike and John Houppis, Florence and Ralph Jope, Lillian and Tom Larson, Dave Mathoff, Mary and Art Nichols, Verna and Carroll Smith, Katherine and Walt Smith, Ruth and Abe Woolf, Velma and Charles Worthen. In addition, Elbridge Atwood and Max Bearon attended the day's activities.

After dinner the group moved to the Kresge Auditorium to enjoy an excellent Pops concert by the Boston Symphony Orchestra under the direction of Arthur Fiedler. It was one of the finest Alumni Day meetings the Class has had — almost a reunion in itself.

And this reminds us, start your plans now for next June so you will be there to enjoy the 30 year reunion at Marshall House! — GEORGE I. CHATFIELD, *Secretary*, 49 Eton Road, Larchmont, N. Y. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

1930

In the February, 1956, issue of the *Technology Review* we advised you that Bill Dickerman was in Paris on an extended assignment for his company. Recently we received word from Bill that he has returned to the United States. All told, he was abroad for six years of service in the London and Paris offices of the Lummus Company. After some leave, during which he plans to visit friends and family and get reacquainted with the United States, he will resume work as staff engineer at the head office of the Lummus Company in New York City.

In the January, 1956, issue of the *Technology Review* we brought you up to date on the doings of Fred Dickerman. We recently had another note from him saying that he is enjoying his job as chief preliminary design engineer at Lockheed, Georgia Division. Last April he and some other associates flew one of the Hercules C-130 propjet cargo transports to Boston to let the Course XVI people look it over. The trip was very successful. Fred spent a two-week vacation with his family in New England this past August.

We had a note from Ed Hill saying that he is director of research of U. S. Army Biological Warfare Laboratories at Fort Detrick, Frederick, Md. He is also senior officer of his reserve unit with the rank of colonel in the Medical Corps, is married, and has three children — two boys and a girl whose ages are 15, 13 and 11.

Dick Huggard dropped us a note in reply to our inquiry card. He is an equipment distributor in Winnipeg, Manitoba, representing principally large American distributors, among them the Marion Power Shovel Corp. of Marion, Ohio; the Ellicott Machine Corp. of Baltimore; and the Barber-Greene Company of Aurora. He is honorary secretary for M.I.T. in his area and at the present time contemplates forming an M.I.T. Association, since it is felt that there is now a sufficient number to consider embarking on this project. He is a member of the Board of Governors of

St. John's Ravenscourt, which is the second oldest school in Canada, ranking after King's College in Halifax. This gives him a keen feeling on some of the elementary problems of education. Dick has two children, a 13-year-old boy and an 11-year-old girl.

Wedding bells rang for Dave Jacobus last July, according to a *Boston Herald* newsclip. The ceremony was performed at 4:00 p.m. on July 14, 1957, in the chapel of the First Parish Unitarian Church, Concord, Mass. Dave's bride is the former Elinor L. Hughes, drama editor of the *Boston Herald*.

Bob Lytle's son, Robert A., Jr., has made a preliminary application for admission to M.I.T. and hopes to be a member of the graduating class of 1962.

In last June's issue of the *Technology Review* we advised you that Ed Mears had been named manager of the Central Services Division of the Dewey and Almy Chemical Company in December, 1956. Recently by way of newsclips we received word that he has received another promotion, this time to general manager of Container and Chemical Specialties Division of that company. This position is newly created and in it Ed will supervise his division's sales, research, and manufacturing activities.

In an article on hi-fi published by *Dun's Review and Modern Industry*, June, 1957, we came upon a paragraph devoted to Herm Scott. The article entitled "Big Business for Small Business" mentioned that Herm came out of M.I.T. in 1931 and went to work in electronics. In 1946 he resigned his position as executive engineer with a radio manufacturer and started his present business of manufacturing turntables, pre-amplifiers, radio tuners. There are about 150 employees in his shop, and it is bursting at the seams. By this time he is probably operating in his new plant in Maynard, Mass.

Music crops up in unexpected places. For example, it turns up in the office of the chief planner at Cincinnati's City Hall, John Sheblessy, who once was piano soloist of Beethoven's *Third Concerto* with the Midland, Michigan, Symphony Orchestra. John has composed three choral works. He is also the composer of blueprints for highways. "Creative expression," says John, "is the common ground — whether you are dealing in tone or in the physical quality of the city, it requires a feeling of tone color and relationship." He has little time nowadays for the piano. All his free time goes into composition. He lets his wife keep up the virtuoso work. She is a well-known pianist in Cincinnati.

Joe Stevens has been renominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee for the Department of Chemistry.

Al Vint wrote us that he is newly moved to Philadelphia as vice-president and secretary of Rose Mills. At the present time he is deeply involved in catching up to himself and hopes to become reacquainted with M.I.T. in these parts. Al sends his best regards to all.

It is with regret that we recently learned of the death of Iver W. Fallstrom, sales manager for Eastern Color and

Chemical Company, Providence, R. I. A native of Worcester, Mass., Iver had lived in Warwick, R. I., for the last 20 years. Iver is survived by his wife, a son, two brothers and a sister.

Our Alumni Office has given us the following list of those who attended Alumni Day this year, with a note saying that this list may not be complete: Mr. and Mrs. Arnold S. Ackiss; Mr. and Mrs. William H. Buracker; Mr. Joseph Harrington, Jr., and guest; Mr. Merritt L. Hulett; Mr. and Mrs. Allen Latham, Jr.; Mr. William W. McDowell; Mr. Edward L. Mears; Mr. and Mrs. Stanley G. Russell; Mr. John C. Schroeter; Mr. Saul Sigel; and Mr. and Mrs. Parker H. Starratt.

The following changes in address have been received: Denis R. Agar, P.O. Box 34, Bourlamaque, P.Q., Canada; Commander Lingum H. Burkhead, Box 2620, Route 5, Bremerton, Wash.; Albert B. Deyarmond, 646 Buena Vista Avenue, Santa Barbara, Calif.; Mrs. Frances Frazier, Box 239, Route 12, San Antonio, Texas; Dr. David D. Jacobus, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, N. Y.; Arthur B. McCullough, 298 Leonard Avenue, Washington, Pa.; Horace W. Myers, 7021 Kalaniana'ole Highway, Honolulu 16, Territory of Hawaii; Nathaniel P. Rand, R.D. 2, Paper Mill Road, Newark, Del.; Harry W. Tileston, Jr., 64 Howard Street, East Braintree 84, Mass.; Charles M. Twelves, Jr., Pacific Telephone and Telegraph Co., 509 S.W. Oak Street, Portland 4, Ore.; Alan W. Vint, 1437 Robinhood Road, Huntingdon Valley, Pa.; Leonard Wechsler, 9128 S. Bell Street, Chicago, Ill.

Very best wishes to you all for a very merry Christmas and a happy, prosperous New Year. — GEORGE P. WADSWORTH, *Secretary*, Department of Mathematics, Room 2-285, M.I.T., Cambridge 39, Mass. RALPH PETERS, *Assistant Secretary*, 249 Hollywood Avenue, Rochester, N.Y.

1933

Seasons greetings from all of your class officers and from the Reunion Committee. As these notes are written, Charlie Bell and his committee have completed preliminary planning for the reunion in June. Please note the dates on your calendar, June 14-16. And this includes your lady.

Top honors for the month go to Robert H. Winters who recently became president of the Rio Tinto Mining Company of Canada. Until the last Canadian elections in June, Bob was Canadian Minister of Public Works. In addition to his post with the mining company, Bob is a director of the Canadian Bank of Commerce. He and his family have moved from Ottawa to Toronto.

Congratulations to several members of the Class who have recent promotions: Fred A. Bickford has become research manager for Bonded Ceramics at Corning Glass Works. Fred has been with Corning since 1936. George Vila has become vice-president and general manager of the Naugatuck Chemical Division of U. S. Rubber. George started with U. S. Rubber in 1936. Burt Webster recently became controller for Raytheon after spending

the last six years with the Boston Woven Hose and Rubber Company. George Huff is now director of plant engineering for the Perkin-Elmer Corp. in Norwalk, Conn. George has been at Perkin-Elmer since 1951; before that he was at United Shoe Machinery here in Boston. Bill Scarborough has been promoted to director of manufacture, Acetate-Orlon Division of Du Pont. We are happy to report, too, that Max Millard is now assistant vice-president in charge of sales for the American Steel and Wire Division of U. S. Steel. Max and his family live in Gates Mills, Ohio. Herbert Somers has become quality manager of the Semiconductor Division of Raytheon. Herbert has been superintendent of industrial engineering for Olin Mathieson in New Haven, Conn.

We are happy to note that Edward F. Hillenbrand, Jr., has been promoted to assistant director of development for Union Carbide Chemicals. Ed has been with Carbide since 1934. We have learned that John Logan has become assistant vice-president in charge of engineering and production for both New Jersey Power and Light and Jersey Central Power and Light. John reports that John, Jr., is now a student at Dickinson and his daughter, Judy, is a student at Elmira. A newspaper clipping and a personal note tell us that Carroll Newton, who is with the Army Engineers, has transferred from Washington to Los Angeles where he is district engineer. Carroll's responsibilities extend throughout southern California and Arizona for both the Army and the Air Force.

Bill Baur reports from Lynchburg, Va., that he is working in the Rectifier Department of General Electric after serving for 21 years at the Lynn plant of General Electric here in the Boston area. Bill's daughter, Linda, is now a sophomore at Lesley College here in Cambridge and his son, Victor, is just entering high school. Bill used to come to the Alumni Day activities regularly and we hope that he will be able to join us at our 25th next June. We have learned that Colonel Leonard Julian has moved from the Frankfort Arsenal in Philadelphia to Vietnam where he is with the Military Assistance Advisory Group. During the war, Leonard served for more than two years in the China-Burma-India theatre. Before entering military service in 1940, Leonard was with Allis-Chalmers in Milwaukee.

One of the most interesting clippings this month concerns the Cross Company in Detroit. Ralph Cross of our Class is executive vice-president of the company which has been given credit for introducing many innovations in the machine tool industry in recent years. Ralph is also a consultant for the Secretary of the Air Force on machine tool matters. We are happy indeed to report one marriage this month, that of John B. Smyth, who came here after graduating from the Naval Academy. He was married to Miss Molly Guion in New Rochelle, N. Y. We've had an interesting note from Mal Masters, still with the Boston Edison Company, who reports with modest pride that his son, Stanley, won a National Merit Scholarship last spring and also a Bausch and Lomb science award. He was valedictorian

of his class at Arlington High School last June and entered Amherst College this fall with the thought of coming to the Institute later. Mal and his family have just moved to Winchester.

Ivan Getting appeared with a panel of other distinguished scientists recently to discuss the development of the nation's air power for the next 10 to 20 years. Any of the Class who get to the New York area should keep in mind that the Class meets for luncheon every third Tuesday in the new quarters of the M.I.T. Club at the Hotel Biltmore. These sessions are presided over by Carb Garbarino. We were pleased to learn that Don Fink spoke at one of the recent meetings of the M.I.T. Club where Art Hungerford presided.

Your Secretary would welcome additional notes about your professional and personal activities. And don't forget June 14-16 in Cambridge for our 25th Reunion. — R. M. KIMBALL, Secretary, Room 3-234, M.I.T., Cambridge, Mass.

1934

Walter McKay, your Class Secretary, was looking particularly elated one day last summer and when I asked him what the formula was he said "'34 Class Notes." Naturally I jumped at the chance to write three of these columns this year and share in the pleasure. If any of the rest of you feel the urge to write, just let one of us know and we might be persuaded to back off and let your column break into print. Do you believe all you read?

First the quickies. — James M. Farrin, Jr., U.S.N., was selected last summer for promotion to the rank of rear admiral. John R. Newell has been named a director of the National Association of Manufacturers, and was awarded an honorary doctor of engineering degree at Stevens Institute of Technology last June.

Daniel D. Strohmeier, Farquharson R. Jansen, Donald F. MacNaught, Thomas F. Donlan, Jr., William Muller '35 and Grayson L. Abbott got together in Quincy, Mass., on the occasion of an annual banquet of the Long Service Club of the Bethlehem Steel Company, Fore River Yard. Dan Strohmeier told the group present that Fore River is making ship design and construction history with the atomic guided missile cruiser and supertankers.

The best way I know to tell of our much traveled classmate James P. Eder is to quote here a large part of a letter that he sent to Walter Wise. Not mentioned in the letter is Jim's wife's name, Mary, and she is tops. Mary came to the States last summer so that the children can go to school here and Jim's plans are to be in the U. S. for the year 1958.

"I never seem to do quite enough to warrant getting into print in the class notes. [editorial comment, how wrong can he be?] I got married (1945) but so have practically all our classmates. I have children, but only two (Martin 9, Nancy 7) and this is a low production figure. As to job success, I'm the worst off, as last year I got in a tax squeeze so that working in Colombia cost me money. I do own three cars, but even that is nothing to brag about, as one is a 1952 Chevy

station wagon in storage in New York, one is a Volkswagen we bought in Germany when there in 1954, and the third is our "new" car, a 1954 Ford. Note, no Cadillacs. By the standard social measuring stick I've done very poorly, not even keeping up with the college classmates I used to know well.

"For 10 years I've been trying to make something of this local furniture factory of ours that makes steel office furniture, chrome plated and black tubular furniture, wood furniture and also machetes. Also on the debit side are our 400 employees when we should have less than 200. After ten years working on purely executive problems I got fed up. I gave all executive work to our manager and decided to enter the factory and learn every job — and that is where I am now, in the factory. I'll bet in a year I'll be the most expert laborer the class of '34 has turned out. I'll know die making, designing of product and tools, sheet metal operations, three types of welding, Yoder tube mill operating, tube bending, plating, wood operations, upholstery operation and wood drying. Oh, I forgot painting and phosphating and machete operations. Saturday, as a side line, I learned how to pay our workers in five minutes instead of the usual hour and a half. But even this is no great forward step as I've always been able to get rid of money quickly. What I'm pretending to do is install a production control department so that our 150 different bulky products flow evenly and at smaller cost. This is not easy to do when most of our men haven't even been through sixth grade. We do have six top bracket men who are at times too bright for their jobs, so that my job is that of bridging the gap between the mathematical wizard master of science engineer and the sixth grade foreman. That's easy, as I've forgotten everything I learned at M.I.T.

"I took a South American trip with our manager that might rate mention in the class notes. Bolivia, where my cousin is economic adviser, we stayed 20 hours. What a country! 70 per cent of the country live at 13,000 feet and many still farm those barren rocky wastes as they did in Biblical times — with a small crooked stick for a plow. This is a truly communist country where the land was so evenly divided up that each family owns such a small plot the members of the family can produce only for themselves. Imagine 70 per cent of the country outside the money market!

"Chile is lovely and so are its people. They produce practically everything there. One 1200 man company makes our types of furniture, electric motors and bicycles. They produce every part of the bicycle, including the paint and tires and only excepting the chain and the steel balls for the bearings. They even pickle, roll and make their tubes from local steel.

"Buenos Aires is the place to live. A loaf of bread costs one U.S. cent and the shops are more interesting than in any city in the United States or Europe. Their problems are the shadow of Peron and their political complex of using 60 per cent of their dollar exchange for importing oil when they have oil under the ground. One of their avenues is 360 feet

wide! You need this for a modern city of 5,000,000, which doesn't know what a traffic jam is.

"But Rio and Sao Paulo are trying to outdo Buenos Aires with magnificent avenues. Sao Paulo is growing at the rate of 150,000 a year! At that rate you need to plan 'big.' Their three levels of traffic in the center of town may not be overdoing it, as 40 years ago the old swimming hole was in this section and a man still living used to shoot wild animals here.

"Caracas, built in a small valley surrounded by mountains, has to build high buildings as does New York's Manhattan. Traffic requires many elaborate levels. In one section there must be six or eight automobile and pedestrian levels, which include bus loading stations and underground car parking areas. To get in and out of that maze requires familiarity with the simple U.S. cloverleaf, three dimensional chess, and a good bit of luck. The U.S. cloverleaf is like checkers in comparison — at least you can see where you're going. The Venezuelans have no respect for our hard earned dollar. \$200 of United States money flow into the country for each citizen, without their doing any work at all for it. They spent 50,000,000 U. S. dollars just for a cable way up to a mountain and down the other side to the sea. The reason is not fit to print. At the second best hotel a lunch for a family of seven would cost you \$35 U.S. money. You can see why we cut this visit short.

"Now that we have gotten rid of our dictator, we like Colombia best of all these countries. Why? Partly it's because we know it, but it's also because of the miracle the people wrought by placing principle and honor above personal danger and economic risks. Where else has a man who controlled such a large army been forced out, by pure force of will of the people?

"Well Wally, you see by the above that I've changed my ideas about South America. There will be 500,000,000 people here by the turn of the century and industrially they are progressing at a rate many times faster than the U.S.A. If there weren't so many different countries there wouldn't be any doubt that South America would outstrip the U.S. just as the U.S. outstripped England."

As this column is being written, I can say that the Russians' first earth satellite is a major topic of conversation among the M.I.T. family. An outstanding technical achievement can be admired whether done by friend or foe. It probably creates a bit more of a mental jolt when it is accomplished by foe. Some who are experts in the missile field are frank to say that it is a humbling experience to read in the newspaper headlines about others' success, even though the possibility has been anticipated. It shows exceptionally good advanced engineering in many areas. Our American choice appears to be high tail fins and chrome on cars, more brands of well advertised cigarettes, more Western television programs, and thicker steaks, rather than satellites. Even I would dislike giving up the steaks, but where it is potentially a question of survival, the choice seems easier.

Merry Christmas to all! Malcolm Stevens, Assistant Scribe. — WALTER McKAY, Secretary, Room 33-217, M.I.T., Cambridge, Mass. MALCOLM S. STEVENS, Assistant Secretary, Room 3-139, M.I.T., Cambridge, Mass. JOHN A. HRONES, Assistant Secretary, Vice-president for Academic Affairs, Case Institute of Technology, University Circle, Cleveland 6, Ohio.

1936

If any of our brother classmates have found their way into the "private investigator" field let them step forward. We have tried practically every other means of getting news — maybe they can render the Class a great service. Of course, it would be a splendid gesture if each one beat the private eyes to the draw by sending in a post card with the latest news. Don't wait until you become president of your company; most of us are just average guys and enjoy reading about what you are doing and learning how we can get in touch with you. Even a few cards, or letters, will help keep this column from drying up. Thanks.

The Reverend Edward A. Cahill, new minister of the Unitarian-Universalist Church of Atlanta, Ga., is a busy man these days working on a program of expanded activities for the church. Ed was written up in the June notes, but since then we have received this additional information. He is a director of the department of world churches of the American Unitarian Association and is in his third term as a member of the executive committee of the International Association for Liberal Christianity and Religious Freedom.

Tom Nelligan was elected vice-president of Albert Schwill and Company at the regular meeting of the Board of Directors. Tom joined the company in 1948 and was made vice-president and director in 1950. After leaving Tech he went to Harvard Business School. He spent several years in production work with the Ford Motor Company and later in production and engineering with Du Pont. Norm Robey has recently been transferred to the position of assistant manager, Whiting Refinery, Standard Oil Refinery, 2400 New York Avenue, Whiting, Ind. Stan Freeman, formerly vice-president in charge of West Coast Operations of Witco Chemical Co., has been promoted to vice-president and director of sales for the entire company. Stan is now located at Witco's headquarters, 122 E. 42nd Street, New York 17, N.Y.

Returning to the "additional news" department — we have something to add to the February notes on Bunky (Semon) Knudsen and Bob (Dr.) Woodward. Bunky, as you probably know, is General Motors' youngest car-division head, general manager of Pontiac. His work is from 8:00 A.M. to 6:00 P.M., and often he has to start earlier and leave later. Since taking over the job he has been methodically mowing down a list of 26 dealer meetings around the country. On a recent western trip, he spent seven out of nine days on a train. He usually flies, however, rushing either to City Airport

to flit away in a General Motors plane or to Willow Run. It's been months since he had a quiet evening at home in Birmingham, although he did manage a trip to the Bahamas with his family and got in some deep-sea fishing. The Knudsens have four children, ranging from 18 to 11. Bunky and his wife Florence like to play golf together at Bloomfield Hills Country Club. After Tech Semon worked for several years in Detroit machine shops before tackling the auto business. He started at Pontiac in 1939 in manufacturing. Among the jobs he held there were defense plant inspector, car-assembly superintendent, and assistant general master mechanic. He was manufacturing manager of aircraft engine operations in Indianapolis, returning in 1955 to become general manager of the Detroit Diesel Engine Division. He was made general manager of Pontiac last July. "You become totally absorbed in the auto business," Bunky says, thinking of the long hours and the full weeks. "There's something very compelling about a business where there's so much change and so many interesting things going on. The competition is very exciting." He has an effective technique for keeping the assembly line people on their toes. Every evening he picks a car at random from the day's output and drives it home, just to make sure the boys and girls are snuggling all the bolts up good.

Bob Woodward has added another honorary degree to his collection. The last time it was Yale; this time, Harvard. This is how the ivy league announcement read: "Robert Burns Woodward: Morris Loeb Professor of chemistry at Harvard, known for synthesis of quinine, cholesterol, cortisone, strychnine, lysergic acid, and other substances; born in Boston, April 10, 1917; B.S. 1936, Ph.D. 1937, Massachusetts Institute of Technology; junior fellow, Society of Fellows, Harvard, 1933-41; deduced chemical structure of penicillin, strychnine, terramycin, aureomycin, and other substances; awarded Harvard's first Ledlie Prize: from his brilliant analysis of molecular structure have come man-made ways to stimulate nature."

Paul Robbins is speech making again — this time before the Worcester Section of the American Institute of Electrical Engineers at its annual dinner at the White Cliffs, Northboro, Mass. Paul is executive director of the National Society of Professional Engineers, Washington, D.C., and as principal speaker talked on "Meeting Our Professional Responsibilities." He discussed the engineer's duty and responsibility to industry, the defense effort, civil affairs, and government. Paul is a director of fellowships for Tau Beta Pi and a member of the advisory committee of *Who's Who in Engineering*. — JIM LEARY, Secretary, One Putnam Park, Greenwich, Conn.

1937

To start the notes this issue, which you are receiving right after Thanksgiving, I want to offer my congratulations and thanks to the members of our Class who have sent letters, post cards, and clippings for our class notes. Taking over a

job which has been handled so well by Windy Johns for 20 years makes one wonder whether he will receive the cooperation of all the Class in his new duties. However, the response for news has been excellent and all we ask is that it continue. Starting with this issue we are going to run a series of biographical sketches on our class officers and all the members of our Class. The class officers are sending the necessary data, and we request the members of our Class whose last name begins with either A or B also to send us some pertinent information about the different positions they have held; their family; books, pamphlets or articles they have written; their Army career; clubs; travels.

The next issue in January will be written by Curt Powell and the following one in February by Jerry Salny. Here is a chance to write Curt and Jerry that letter you have meant to write for quite a time. Also, when you receive this Technology Review, right then is a good time to put one of us on your Christmas card list.

Lawrence E. Hough has just been elected assistant vice-president of the Singer Manufacturing Company. He joined the Singer plant in Bridgeport, Conn. on his graduation and served for two years as assistant plant maintenance engineer. In 1942 he was transferred to the engineering department to work on government contract work. During World War II, he was in charge of naval fire control instrument production and in 1945 was named assistant superintendent. In 1949, he was named assistant works manager and was appointed works manager in 1954. He was assigned to the company's executive office in 1956.

Fred N. Rolf joined the Bell Telephone Laboratories in 1937 as a member of the Switching Development Department. At present, he is in charge of a group designing circuits for crossbar tandem, while his earlier work was on crossbar tandem switching circuits, the automatic message accounting system, and the Number 1 crossbar telephone switching system. His group is responsible for the centralized automatic message accounting system which brings the benefits of direct distance dialing to those areas where local automatic message accounting installations would not be economical. Sounds like interesting work, Fred, and of benefit to us all. Fred's address is 4 Edgehill Ave., Chatham, N.J.

Just received a card from Walt Sherry announcing a new coordinated engineering service for architects by his firm, Walter H. Sherry and Associates of 1160 Main Street, Buffalo, N.Y. Best of luck to both you and Joan in your expanding enterprise, Walt. Bill Burnet has a new position as director of engineering and development of Strong-Scott Co., manufacturers of mixers, grinders and classifiers, in Minneapolis, Minn. Bill's address is 5043 Fremont Avenue South, Minneapolis.

Charlie P. Witsil, Jr., sent a note that he is now with the Engineering Department of E. I. du Pont de Nemours Co., Inc. He is married and has one child. The Witsils live at 302 Avondale Circle, Severna Park, Md. Earl D. Fraser is the Planning Director of Sacramento County,

Calif., and he writes: "The place is growing so rapidly that we wonder if we are not further behind in our community planning needs now than when we started to work here two years ago." Earl is married and his address is 2244 LaPaloma Way, Sacramento, Calif.

Ray A. Dréselly has been promoted to section head in the Technical Service Division at Humble Oil and Refining Company's Baytown, Texas, refinery. He heads the group that is responsible for technological improvements and new projects in the fields of butadiene production. Ray has been a member of Technical Service Division since receiving his S.M. degree in chemical engineering at M.I.T. in 1938. Ray sent a note to Joe Heal in which he says he was sorry to miss the 20th; also he would "like to see any of the lads that pass through. The only recent passerby was Mort Abbott. He is now with Shell Development in Emeryville, Calif." J. B. (Red) Cohen is owner of the Fleet Wing Kennel in North Andover, Mass., and stands a good chance of becoming the first New Englander to win the Wonderland Derby twice when the finals are run in Revere, Mass. Best of luck, Red. James D. McLean, President of Hoffman Laboratories, Inc., of Los Angeles, Calif., whose company is expanding their capabilities in the fields of guided missiles and electro-mechanical equipment, has just been elected to the board of directors of the Hoffman Electronic Corp.

George W. Ewald has just joined the J. P. Stevens Co., Inc., Stevens Building, New York, N.Y. as manager of the synthetic industrial fabric sales. George will long remember the summer of 1957 as the time he acquired a new daughter and then a new job. I am sure the whole Class sends George their best wishes on both accounts. Archie Ahmadian and his family just completed what sounds like a wonderful trip to Cologne, Germany, where Archie is now working. Their new address is Deutscher Ring 60, Cologne, Germany. Their travels took them through Sicily, Italy, France and Germany. For those of our Class who may have a trip in mind, the Ahmadians have observed: "Whenever we travel we meet some sad and self-conscious Americans who have been sold on the idea that it is simply too banal to visit tourist attractions and to hire a local guide. The poor things stumble around Europe, not getting any interesting data or local viewpoint on what they see, eating badly, missing connections, and wasting time. We also meet people who learned the hard way and are back to try again with a good tourist agent to help them do it right! And at the right season! Right now Cologne is full of tourists who can't see the sights for the crowds, who are wilting in the heat and paying double for the privilege! Summer is no time to travel." Thanks, Archie, and the best of luck to you, Louise, and the girls in Germany.

Our Class President Phil Peters was born in Oak Park, Ill., December 11, 1915. He attended the Oak Park public schools and graduated from high school in 1933. He was awarded the M.I.T. Chicago regional scholarship prior to his entering Tech as a freshman in the fall

of 1933. During his four years as an undergraduate at M.I.T., Phil was consistently on the Dean's List and developed an interesting money-earning sideline as representative for a florist and a cap and gown rental agency. Phil was a member of the Sigma Nu fraternity and active in extracurricular affairs at the Institute. Following our senior year, Phil was awarded one of six national Tau Beta Pi fellowships, which paid his way to a graduate year at M.I.T. and resulted in a master's degree with specialization in business, economics, and labor relations. Immediately following graduation he went with John Hancock in its newly formed Group Annuity Department, which designed and sold pension plans to employers. This was right in line with his master's thesis which was on the history and development of industrial pension plans in the United States. Phil rose to be director of Group Annuity Sales for the John Hancock in 1943, just before leaving for the Navy, where he remained until 1945, having duty in the Caribbean and Pacific Theatres while permanently stationed at Radiation Laboratory. In 1946, when he returned to the John Hancock, Phil was appointed director of group insurance sales and service, covering all forms of employee benefit plan coverages. In 1950 he was made a second vice-president, and in 1956 vice-president of the John Hancock in charge of Group Insurance Sales and Service activities throughout the United States, Canada, Hawaii, and Puerto Rico. With a nationwide sales organization to supervise, Phil travels a great deal—frequently as much as 50,000 to 100,000 miles in a year. He has worked actively for the U.S. Chamber of Commerce in committee work and has been extremely active in M.I.T. Alumni affairs. Currently he is a member of the Alumni Council and has served as our class agent almost since the inception of the Alumni Fund. Beyond this, Phil has been active in community affairs in Wellesley Hills, Mass., where he lives. He has been District Commissioner for Boy Scouts and headed drives for Community Fund and Red Cross. He is a member of the Algonquin Club, the Wellesley Country Club where he is on the Board of Governors, and of the Boston Rotary Club. Phil married Ruth Bell in 1939 and they have three sons: Phil, Jr., 14; Gregory, 11; and Jeff, 9. His hobbies are golf and skiing, and he and his family currently are working on a ski lodge which they have built up in Jackson, N. H. He seems to get as much fun out of pounding nails and finishing the lodge as in the actual skiing.

In closing our notes, all of your class officers wish you and your family a Merry Christmas. — ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford, Mass. PROFESSOR S. CURTIS POWELL, *Assistant Secretary*, Room 5-323 M.I.T., Cambridge, Mass. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N. J.

1938

Material for the notes is still plentiful, but it comes primarily from news items or releases rather than from the personal

communications I like to see. First on the list is a rather lengthy item from a trade journal about Burt Aaronson. Burt and his mother operate a children's clothing store in Brookline. The business is a growing one and has gross sales between \$100,000 and \$200,000. The Aaronsons employ five salesgirls and a stockman.

Nathaniel Martin has been appointed director of Facilities Planning and Building Construction by International Business Machines. He has spent almost 20 years specializing in the design and construction of large-scale engineering projects, ranging from dams to aircraft assembly plants. As a colonel in the U. S. Army from 1949 to 1954, he was engineer in charge of new construction for all requirements in France and the Wurttemberg-Baden area of Germany. Before joining I.B.M. he was on the faculty of the U. S. Army War College.

Warden Hartman has been appointed general manager of New Product Coordination of the Armstrong Cork Company. The new staff function which he will head is responsible for serving as a clearing house for the entire company on information about major new product development projects, for assembling data to evaluate projects, and for assisting in setting priorities and timetables for those that are approved. He joined the company's Building Materials Division sales organization in 1939. Following service in the Army Corps of Engineers during World War II, he served as manager of contract operations and manager of the Industrial Insulation Department in the Building Materials Division before being named general credit manager in 1954. He was elected assistant treasurer later in 1954.

Harold Scheeline was married last March to Jean Camp of San Francisco. He decided a more rural atmosphere was better than a New York apartment, so moved to West Orange in August. He has been named an assistant manager in the office of refinery liaison, a unit of the Esso Research and Engineering Company. In his new position he will provide technical assistance on petrochemical operations to the world-wide affiliates of the Standard Oil Co. of New Jersey.

Ivan Mayer, also with Esso Research, has been named an engineering associate in recognition of his accomplishments and interests in technical lines.

From Ingenium Hechenbleikner comes a note that he is now director of research for Shea Chemical Corp. in Adams, Mass.

Last June Daniel Noble received an honorary doctor of science degree from the Arizona State College. He is executive vice-president of Motorola. In 1938-39, he designed, developed, and installed for the state of Connecticut the world's first mobile, two-way frequency modulation police radio system. He moved to Chicago, Ill., in 1940 to be director of research for Motorola. During World War II, he developed the battle-famous Signal Reserve Corps 300 walkie-talkie unit, which figured prominently in the Italian and French coast invasions and became the major portable communication unit for U. S. forces in the Pacific area. At Motorola, he directs the activities of more than 5,000 people engaged in commercial

and military electronics. — DAVID E. ACKER, *General Secretary*, Arthur D. Little, Incorporated, 15 Acorn Park, Cambridge, Mass.

1940

Dick Orth has been appointed vice-president in charge of planning for Sanders Associates, Inc., of Nashua, N. H. Previously Dick was vice-president and general manager of the Westinghouse Electric Corporation's electronic tube division in Elmira, N. Y.

Joe Havens has been appointed assistant professor of psychology and college counselor on the Danforth Foundation at Carleton College, Northfield, Minn. Your Secretary had the pleasure of teaching at Carleton one year, and Joe should find it a most congenial environment in which to work and live.

Julius Molnar has been elected vice-president of Bell Telephone Laboratories. Previously he was director of military development for this company, and had been concerned with research in physical electronics and the development of microwave tubes. — ALVIN GUTTAC, *Secretary*, Cushman, Darby, and Cushman, American Security Building, Washington 5, D.C. Dr. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology, Room 16-325, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

1941

Edgar Engle has been appointed development engineer by Kennametal, Inc., of Latrobe, Pa. He will be concerned with the development of new products in connection with the company's current expansion program. Ed has been associated with the hard carbide industry ever since graduating from Tech, having had experience in development, manufacturing, and application of carbide products to industrial uses. Until recently, he was technical director for the Vascoloy-Ramet Corporation. He is presently chairman of the Carbide Committee of the American Society for Testing Materials. Also in a new position (but not in a new company) is Herm Affel, who is now director of computer and control engineering for Philco. Similarly for John Knox, now head of project engineering for Adamas Carbide Corporation, producers of tungsten carbide and ceramic cutting tools, dies, and wear parts. After 15 years with Firth Sterling, Inc., of McKeesport, Pa., as supervisor of development and manager of carbide quality control, John served for some time as production manager of the Sintercast Corporation of America, in Yonkers, N. Y.

A card from Obie Denison, indefatigable secretary of the Class of '11, brought the news that Lieutenant Colonel Mark Brown, his wife, and their three children have been visiting his parents in Framingham, Mass. Colonel Brown, an Air Force pilot and meteorologist, has just completed two years as operation officer of the 8th Weather Group at Scott Air Force Base, Ill. He has been assigned to the University of Indiana at Bloom-

ington for a year's graduate study in business administration.

From the Malden, Mass. *News* we hear that Dr. Paul P. Norman (Leona's brother) "... has successfully passed the examinations of the American Board of Obstetrics and Gynecology for certification as a specialist in those fields, and has been elected a fellow of the American College of Obstetricians and Gynecologists. Dr. Norman received his A.B. from Clark University, Worcester, and did graduate work in public health at M.I.T. After graduating from medical school, he served an internship at St. John's Hospital in Lowell. In 1951, he began his formal postgraduate training in his specialty, and served as resident surgeon at the Providence Lying-In Hospital, followed by two years of further training at the Bronx Hospital in New York City. Since 1954, he has been practicing his specialty in Malden."

Hank Avery was among some 700 educators and leading citizens of Pittsburgh at the inauguration ceremonies for Dr. E. H. Litchfield, twelfth chancellor of the University of Pittsburgh. — IVOR W. COLLINS, *Secretary*, 28 Sherman Road, Wakefield, Mass. HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

We trust that this holiday season finds each of you enjoying your greater responsibilities and continuing to be amazed at what little children can learn at very tender years. While working on a calculating machine one evening I was pleased to note that Laurie, at 18 months, knows when she has her full complement of clothespins.

By way of responsibilities, Jerry Coe has been appointed manager of marketing for the Silicone Products Department of the General Electric Co. His past assignments in this department have covered process development, manufacturing engineering, customer service, and sales development. Jerry, Peggy, and their three children are now living at 1200 Ruffner Road in Schenectady.

Ned Rowe, secretary of the Class of 1906, was kind enough to send along the following item. The *Shipyard Bulletin* of the Newport News Shipbuilding and Drydock Co. reports: "John E. Flipse is appointed chairman of the Research Committee. The appointment of the first full-time chairman for this committee is an indication of the increased importance the Company has attached to the development of possible technological advances in the field of shipbuilding." Jack received an M.S. in mechanical engineering from New York University in 1948. He has worked as a naval architect for George Sharpe and for Cox and Stevens. Our last report was that he was a professor of naval architecture at the Merchant Marine Academy and that he also taught at the New York State Maritime College. For the past four years he has worked for the Sperry Company on the development of Sperry Gyrofins and other projects. He will undoubtedly be working on the first nuclear-powered aircraft car-

rier; it is planned to be 1,088 feet long with a displacement of 75,000 to 85,000 tons. Jack, his wife, and their four children (three girls ages 7 to 13, and a one-year-old boy) are now living in Warwick, Va.

A very Merry Christmas from your *Secretaries*, ED EDMUNDS in Albuquerque, BOB KEATING in East Alton (Ill.), JACK QUINN in Hawthorne (Calif.), and LOU ROSENBLUM, Photon, Inc., Cambridge 41, Mass.

1943

Our Class continues to grow in stature in the business and engineering world. Witness the following news which I received during the past month. Clyde Booker received four patent disclosure awards from Westinghouse; he has been with their Products Research Laboratory in Pittsburgh for the past 10 years. E. Donald Hoyt has been appointed Frame Plant manager of American Optical Co., in Massachusetts. His work there is in the ophthalmic division, and includes supervision of the print, carpenter, and box shops.

Emery St. George, Jr., former assistant director of the M.I.T. Dynamic Analysis and Control Laboratory, along with nine other former M.I.T. staff members, recently formed an independent corporation for general industrial research known as Hydel, Inc. This firm is to be assisted financially by American Brake Shoe Company, and was organized for the purpose of providing engineering service to industry in the field of automatic control. Emery is president of the outfit, which is located in Cambridge, Mass.

William W. Mason, who received his master's degree in chemical engineering with our Class, has been named controller of The Froedtert Corporation, one of our largest malting firms. Bill was formerly with Merck and Company, and joined Froedtert in 1955 as administrative analyst. Gwynn H. Robinson was elected a national director of the Air Force Association in August. He has lived in Colorado Springs, Colo., since 1953, where he is a partner in the firm of Feldt and Robinson, independent oil producers. Gwynn is a lieutenant colonel in the Air Force Reserve and a senior pilot.

Ralph Leader, our 15th reunion chairman, is supposed to be organizing the affair, but from all indications he is off on business trips most of the time, and the so-called committee doesn't know where to turn. I can advise you that the dates are June 13 to 15, 1958; that if you haven't received a notice by now, then your wife has been hiding the mail; and that this is going to be the biggest, most extravagant and momentous affair our Class ever had. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

1946

Frank M. Verzuh, Donald A. Hurter, Robert S. Loomis, Edwin H. Tebbetts and yours truly were privileged to attend the Second Alumni Officers' Conference held at M.I.T. on the week end of September 6 and 7, where we were treated to, among

other things, talks by Julius A. Stratton '23, Chancellor of M.I.T., Deans Stever, Rule and Harrison, Professors Forrester and Draper, and Vannevar Bush '16, chairman of the M.I.T. Corporation. We stayed at Baker House, saw all the new buildings which have been erected since our day, the latest of which is the brand new Compton Laboratories. We also had special guided tours to see an atomic clock, the Synchrotron, and the new Computation Center with its monstrous I.B.M. 704 computer. The latter visit was conducted by Frank Verzuh, assistant director of the Center. Also included in the program were discussions on the Alumni Fund solicitation program and the great need for a successful fund raising year. We heard things that most of us knew already, but we also learned things that we, as '46 men, didn't know. Our Class has one of the lowest percentages of class members who participate in M.I.T. by contributing to the Alumni Fund. In fact, no class between 1879 and 1953 has a lower average of participation. In addition to this rather discouraging statistic, we learned that the average contribution of the few in our Class who do contribute is the lowest amount of any class between 1879 and 1950; is one-quarter the amount of the classes of 1948 and 1949; and is one-fifth the average for all the graduate classes of M.I.T. I'm sure that you will agree that this record of the Class of 1946 is not very brilliant. Of course, everyone who reads this is a contributor or they wouldn't be receiving the magazine in the first place. But the second statistic given above indicates that we are not very generous givers. By the time this is read we should all have received our yearly dunning letters. What say we make our Class look a little better this year than we have in the past? From the average donation given last year, I doubt that anyone would be seriously hurt if he doubled his contribution for this year. (Remember—it's deductible.) If you have already sent in your contribution without a generous increase over last year, why, don't be bashful, send in some more. Be sure to indicate your class.

Now that I have spent the first half of this column on exhortation, let's get back to who's where and why. Donald E. Burke writes from his new home at 2424 Fairway Avenue, South, St. Petersburg, Fla.: "My family and I are enjoying the fruits of our past labors. After I ease into this sensible way of living here I plan to devote some time to advanced home design and construction." John R. MacLachlan, Commander, U. S. Navy, has assumed his new duties as Assistant O. and R. Officer, Overhaul and Repair Department, Naval Air Station, Quonset Point, R.I. Edward H. Cumpston has moved from Pittsfield, Mass. where he was director of engineering and research for E. D. Jones and Sons Co., of Schenectady, N. Y. where he is now with General Electric Co. and a consultant in manufacturing systems analysis. Glen Dorflinger writes to say that he is the Texas Division Manager of the Fischer and Porter Co., manufacturers of industrial control instruments, data reduction and automation equipment. The Dorfingers have a third child, Geoffrey, born

in May, 1956, and they all call 4615 Cedar Oaks Lane, Bellaire, Texas, home. Glen was active on the Texas Eisenhower campaign committee, but is even more proud of his recent election as eighth vice-president of the Texans Without Oil Wells, Limited, organization, a group with very limited membership and diminishing daily. Perhaps by now he also will have been drummed out of the organization.

Hugo Guarda d'ella Maggiora is superintendent engineer of the Chilean Line, Inc., a steamship line. He and his wife and two children live at 9584 Ft. Hamilton Parkway, Brooklyn 9, N.Y. Ernest Levens is head of the organic chemistry section at the Whittier California Research Laboratory of American Potash and Chemical Corp. Their principal research at present is on organo-boron compounds. Ernest joined American Potash in 1952, after having worked at F. S. Bacon Laboratories in Watertown, Mass. Ernest married an M.I.T. girl, Jeanette Herman, master of public health, 1942, and they now have two children and live at 829 E. Fourth Street, Whittier, Calif. William Gaugh taught at Texas A. and M. from 1946 to 1947 and then joined Northrup Aircraft Company, Hawthorne, Calif., where he is now a senior engineer engaged in wind tunnel testing, stability and control analysis, aeroelasticity, and flight test liaison. He is the co-author of various papers published in the *Journal of Aeronautical Sciences*, including "Determination of Elastic Wing Aerodynamic Characteristics" and "On Aeroelastic Solutions." Bill and his wife Patricia live at 10046 South La Salle Street, Los Angeles 47, Calif. Mohammed Sheet Al-Imam writes from his home at Al-Mansur, Baghdad, Iraq. He is married and has two children, a boy and a girl. His attendance at M.I.T. was on a grant from the government of Iraq, and upon graduation he returned to his country to work for the government in various public works departments. At the same time he had his own office for consultation on civil and sanitary engineering, and in 1956 he resigned his government position and is devoting full time to his private business.

Donald E. Robinson is a supervisor in the design analytical group of Pratt and Whitney Aircraft, a division of United Aircraft Corporation in East Hartford, Conn. He is engaged in classified work on the aircraft nuclear program. When not busy working or attending night school at the Hartford Graduate Center of Rensselaer Polytechnic Institute where he is working toward his master's degree in mechanics, Don will be found at home with his wife and three children at 34 Virginia Road, Manchester, Conn. Robert E. Ritterhoff is superintendent of raw material and mill shipping for the Paper Board Mill of Container Corporation of America in Philadelphia. The Ritterhoffs and three children live at 610 Fernfield Circle, Strafford, Wayne Post Office, Pa. Melvin W. Friedman started his own organization about five years ago, M. W. Friedman Associates, and is engaged in industrial and management engineering consulting and is also a manufacturers' representative. Prior to forming his own

company he taught at Northeastern University from 1947 to 1951, and has continued since then in evening school. The Friedmans and two children live at 98 Osborne Path, Newton Center, Mass. After M.I.T. Fred Fuller earned his master of business administration at Harvard Business School, and then joined the Bellows Company of Akron, Ohio, where he is a field engineer selling pneumatic and hydraulic industrial equipment out of their Chicago office. Fred, Dorothy, and daughter Cynthia live at 422 Stratford Avenue, Elmhurst, Ill. Fred says he enjoyed the last reunion but suggests that we hold the next one in Florida.

I guess this will do for this month. Stick around for the next thrilling installment. Merry Christmas to all, and to all a good night. — JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

1947

This is my first attempt at a journalistic endeavor in such a long time that I approach this effort with some timidity. As of this writing, except for some information received directly from the Institute, news of the world-wide Class of 1947 is quite meager.

It has been my misfortune not to have been able to contact Claude on my two-day visit to school for the Second Alumni Officers' Conference, so that I'm not certain whether the reunion and Alumni Day festivities and activities have been covered; this material has to be in before the November issue is received. However, if it hasn't, your Correspondent will be certain to get it into print for the next issue.

Several interesting pieces of information have been received concerning advanced degree members of our Class. Dan Maisel of Union, N. J., who got his doctorate in chemical engineering in 1947, has been appointed assistant director in the chemicals development division of Esso Research. Arnold Seigel, Chevy Chase, Md., is now chief of the gas dynamics division in the Ballistics Department at the Naval Ordnance Laboratory near Washington, and is doing experimental and theoretical research of high-speed missile flight. This is certainly important work, and it's gratifying to learn that one of our classmates is responsible for a portion of the progress in this field. Colonel Harry G. Woodbury, Jr., is holding down a post in the Ryukyu Islands; he's an old Army man (1938) and received a degree with us in 1947.

In the field of technical journalism, E. E. David, Jr., engineer in charge of acoustical research at Bell Laboratories, has written a paper on voice-actuated machines, which was recently published in the *Bell Telephone Record*. Al Hylas, senior engineer for surface research radar in the surface armament division of Sperry-Rand, recently delivered a paper at M.I.T.'s Lincoln Laboratories having to do with missile detection.

Charles Reynolds, Course II, has joined the faculty of the Thayer School of Engineering at Dartmouth as assistant dean and assistant professor of mechanical engineering. George Sweeney was married

to Beverly Gay Groff of Long Beach, Calif.; they will make their home in Boston.

Remember, the more news I get, the more you get. Let me hear from you all. Best wishes for the holiday season. — ARTHUR SCHWARTZ, *Secretary*, 176 S. Harrison Street, East Orange, N. J.

1948

An interesting scattering of news has come in for the December Review notes. First, a couple of short items.

Phil Lally has been transferred from the Sperry Gyroscope Company to the Sperry Electronic Tube Division. He's a research and development engineering supervisor, and has now built up eight years with Sperry. His count on children now stands at three: Jeffrey, 8; Stephen, 7; and James, 4.

Dr. G. William Mahlman is now working in the Electron Tube Laboratory of the Research Laboratories of the Hughes Aircraft Company in Culver City, Calif. Raymond F. Rogers, who has been assistant treasurer of the Polymer Corporation, was elected to the additional office of secretary at a recent Board of Directors meeting. Ray joined the Polymer Corp. in June, 1953, and was made assistant treasurer in August of that year.

B. W. Birmingham is working at the Boulder Laboratories of the National Bureau of Standards on the development of large bubble chambers. This work is directed at overcoming some of the shortcomings of cloud chambers, photographic emulsions, and other detection equipment available for high-energy experiments. George T. Swallow has been appointed curate at Calvary Church, Williamsville, N. Y., by Right Reverend Lauriston L. Scaife, bishop of Western New York, effective September 1, 1957. George was a naval architect with the U. S. Navy overseas during the Korean War, and he worked at the Norton Company in Worcester, Mass., before going into the priesthood.

The finest piece of reporting comes from Otto K. Wetzel, Jr., of Dallas, Texas. He has given us such a fine summary of his activities since before 1950 that we are reproducing the whole letter for his many friends: "The combination of a brief layover between planes in Chicago, which permitted a call to Dr. Robert Drye '47, and the fresh memory of the last issue of the *Technology Review* has at long last stirred my guilty conscience into action. Being officially of the Class of '48 (February), but having gone most of the way through in 1947, I naturally associate myself with both classes, which gives me two places to look in *The Review*."

"Since my last and only letter was written sometime before 1950, for anyone interested in my whereabouts since leaving the shores of the Charles River, I might recap briefly. After leaving Boston that cold February, I went to Dallas, where I was employed as an engineer in the Natural Gas Department of Magnolia Petroleum Company. My first assignment was as plant engineer at a gas processing plant in south Texas. Six months later I began doing start-up work on new natural

gas processing facilities owned by Magnolia. I continued doing this work in Louisiana, Texas, Oklahoma, and Kansas for about 18 months, headquartered the last year in Dallas.

"In December, 1950, I left Magnolia and joined Robert L. Purvin (Sc.D., Course X, '41), Consulting Engineers, now Purvin and Gertz, Inc., Consulting Engineers, as process engineer. Being located in the Southwest, our work had consisted mostly of design and evaluation of petroleum and natural gas projects, but in recent years more of our work has been directed toward the chemical and petrochemical field. As an example, the original conception and economic evaluation of the recently completed plant of Texas Butadiene and Chemical Corporation near Houston were made by Purvin and Gertz. As for myself, I have continued to be largely interested in natural gas processing projects, which work until recently has been centered largely in the Southwest. Recent developments in the petroleum industry in Canada, however, have been requiring more and more of my time to be spent there.

"As is the case with the consulting field, I spend a good bit of time traveling. As a matter of fact, I am penning this somewhere over Michigan between Chicago and Detroit. Besides having two M.I.T. men in the firm, Robert L. Purvin and Robert L. Greene (S.M., X, '47), I have a fair chance to see a number of familiar faces in my travels. Besides talking to Bob Drye on occasional trips through Chicago, I see Andy Pfeifferberger when I'm through Denver. For those who don't know, Andy is married and has three children. Incidentally, Andy and I, together with seven other stalwarts, shot the rapids of the Green River through Dinosaur National Park in Colorado in 1955. Larry Michel '47, X, is in Houston with Texas Butadiene and we've almost converted one Frenchman to a Texan. Max Daggett '46, XVI; Jack Freiberger '45, II; and Bill Scott '44, II, are all in Dallas and are frequently seen. Max and his charming wife, Virginia, were able to visit Jane and myself in Canada this summer and we had an enjoyable time at Banff, Lake Louise, Jasper, and other scenic spots.

"I note I mentioned Jane in my previous paragraph without ever explaining. Yes, even to the disbelievers, I finally made it. A year ago last June I married Jane Allman of Dallas. She has now retired from her job as director of Christian Education at the First Presbyterian Church and is busy making preparations for our first child, which is due in December.

"Prior to our settling down for our family, as if I didn't do enough traveling in my work, we had a delayed honeymoon of three weeks in Central Africa. This trip included visits with missionary friends and an 850-mile auto trip through the heart of the big game country, which game we hunted with camera and tape recorder. It will take us almost five minutes to set up our tape recorder and projectors for anyone even hinting that they would like to see and hear. . . . Sincerely, Otto K. Wetzel, Jr."

A committee meeting was held Monday, September 16, 1957, at Wenham, Mass., for the purpose of making arrange-

ments for the 10th reunion of the Class of '48. Those attending were: Ben Brettle, Bill Katz, Harold Ottobriini, Roy Evans, Joe Yance, and Bob Bliss. Jim Adelstein, acting chairman, made arrangements with the Curtis Hotel in Lenox, Mass., because of its convenience to both New York and Boston. The reunion will run from Friday evening, June 13, through Sunday noon, June 15, 1958.

Robert F. Rowe and his wife Patricia have been living in Hyde Park, Mass., since last year. Bob is working for the John W. Cowper Co., Inc., as project manager on the M.I.T. nuclear reactor. Bob reports that several M.I.T. men are connected with this project, including Charles H. McDonnell, Jr., '48, who is the project engineer for ACF Industries, the prime contractor. The Rowes, with their six children, expect to move back to Buffalo at the end of the year.

Heard from Harry F. Davis. He is an assistant professor of mathematics at the University of British Columbia at Vancouver, British Columbia, Canada. As yet, Harry is still single, but who knows how long he can remain that way?

It seems that the older children of Robert C. Dean, Jr., of Easton, Pa., feel a bit slighted since they were not recognized in the last class notes as was their sister, Elizabeth Stuart. They are Margaret Sarah, born June 19, 1952, and James Campbell, born June 19, 1954. We hope that this will help to mend their feelings toward us.

Milton Kamins was awarded a mechanical engineering degree at the commencement exercises of the California Institute of Technology at Pasadena in June of this year. The University of Minnesota conferred a master of arts degree on Charles Loufek, Jr., June 15, 1957. John Maurer, West Albany, N.Y., received his master of science in engineering degree from Union College in Schenectady, June 16, 1957. Maurer, a native of New York City, is employed as a microwave engineer in the General Engineering Laboratory of the General Electric Company.

Two other members of our Class were awarded degrees from the University of Rochester at Rochester, N.Y. They are Jesse Haines, master of science in optics, and William Halbleib, master of science in mechanical engineering.

A. Graham Sterling, Jr., has been named production control superintendent of the Nuclear Products Division of Metals and Controls Corp., according to an announcement by Jerome Ottmar, vice-president and general manager of the Nuclear Products Division. Mr. Sterling's duties will include supervision of purchasing, scheduling, materials control, programming, and traffic at Nuclear Products, America's first and largest privately owned plant making nuclear fuel element components and assemblies. Mr. and Mrs. Sterling live at 244 County Street, Attleboro, Mass.

Robert A. Ginivan, Jr., Everett, Mass., became personnel manager of the Monsanto Chemical Co.'s Inorganic Chemicals Division Plant at Everett in April. He formerly was their personnel supervisor. John F. Stedje, formerly assistant director of systems and procedures, has been named director of that department according to an announcement by Roy L.

Wolter, general manager of Automatic Transportation Co., Chicago. John resides at 518 Greenleaf Avenue, Wilmette, Ill., with his wife and two children.

Thomas Boak, president of the Plume and Atwood Manufacturing Co., announced the appointment of Cornelius L. Hudak to the position of sales manager for the Rolling Mill Division of the company. John M. Whittaker, president of New England Confectionery Co., Cambridge, announces the appointment of Howard N. Smith, Jr., as assistant to the president. Smith, who joined NECCO earlier this year, was formerly vice-president and treasurer of Dariomatic, Inc., Los Angeles.

Howard N. Feist, Jr., of Wellesley, was recently the guest speaker of the Leominster Rotary Club, at the Clover Hill Restaurant in North Leominster, Mass. The topic of Dr. Feist's talk was "Management Techniques Employed to Increase Profits." Donald M. Graham has been appointed planning administrator for the City Planning Board of Providence, R.I. Graham formerly was the director of the Providence Redevelopment Agency. The president of the firm of Eberle M. Smith, Inc., Associates, Architects, and Engineers has announced the expansion of the firm to include Lyndon Welch. Welch, a professional engineer, is a native of Boston, Mass., and a '48 graduate.

Experiences during World War II in the Air Force have contributed to the authoring of a successful book of poetry by Nicholas Prasinos of Cambridge, Mass. According to advance reviews, *Jewels in the Night* should rate Prasinos some distinction among poets. Prasinos gained his material in actual experience, and between missions worked on his poetical inspirations. He was a radar navigator. Prasinos is the owner of the Pilgrim Insurance Co., Newton Corner. During the summer vacation we heard from William S. Spiller, 38 W. Hathaway Road, Spring Hill Station, Mobile, Ala. After spending four years in Everett, Wash., he was transferred to Mobile and is currently assistant technical superintendent for the new tissue mill of Scott Paper Company. In September, 1956, he was married to Deborah Jordan of Bryn Mawr College and Charlottesville, Va.

Robert A. Ormiston has just completed 10 months at the University of Pennsylvania's Institute of Humanistic Studies (sponsored by the Bell System). Now he is back on the job as district plant superintendent of Long Lines Department of American Telephone and Telegraph Company in Dallas. He resides at 5914 Berkshire Lane, Dallas. Stuart E. Smith moved from Houston, Texas, to Fort Lauderdale, Fla., in April, 1957. He is now working in real estate as a salesman for Sun Realty.

Captain Angelo Giambusso of Everett, Mass., has been assigned to attend graduate school at M.I.T. for civil and nuclear engineering. Norman H. Kreisman, vice-president and secretary of the Isaac Goldman Co., Inc., New York City, is now living in Westport, Conn., with his wife Gloria and daughter Polly Ellen. After eight years with United Aircraft in East Hartford, Conn., Benjamin F. Kendig, Jr., has joined Wind Tunnel Instrument Company in Burlington, Mass. Benjamin has

been married almost nine years and has three active children, two girls and one boy. The Kendigs reside in Winchester, Mass.

Roger Jeanty of Wilmington, Del., has been promoted to vice-president of the Pyrites Co., Inc. Harry Bing-You now resides at 4489 Broadway, New York City, with his wife Antoinette. He has changed jobs and is now at G. V. Controls, Inc., East Orange, N. J. Albert E. Heiges, Jr., worked for a brief period with Curtiss-Wright Corp. in Susquehanna, Pa., and has now returned to Westinghouse in Baltimore. He and his wife reside in Ellicott City, Md., with their two sons, Gregory Scott and Gary.

Kenneth Stickney was married to Olive Anderson July 8, at the Federated Church at Orleans, Mass. Kenneth presently is employed by the Fiber Leather Company of New Bedford. They are residing in Mattapoisett. Miss Elaine I. Green became the bride of Charles Rosen of Boston in April of this year. Charles is associated with the Plywood Ranch, Belmont, Mass. After a Caribbean trip, Mr. and Mrs. Rosen have settled in Newton.

St. Agnes Church in Arlington, Mass., was the scene of the wedding of Joan E. Cavanagh and John R. Mitchell. They are now residing in Lowell, Mass. And long, long ago (in November, 1956) Mary Jane Mayer was married to Leonard (Bud) Bezark, Jr., in Chicago.

That's all for now. See you next month, maybe. — WILLIAM R. ZIMMERMAN, Secretary, Moraine Paper Company, West Carrollton, Ohio. RICHARD H. HARRIS, Secretary, 26 South Street, Grafton, Mass.

1951

There have been times in the past when material for the class notes was pretty hard to find, and when it was only by luck and considerable hunting that we were able to get together some copy every other month or so. This year, though, the shoe is on the other foot, and there is almost too much news. Or at least there are plenty of leads, if we can muster the energy to run them down. Whenever some member of the Class notifies the Institute that he has moved, the Alumni Office sends us a "change of address" slip; these slips look very much like the sales tickets that are cranked out of small machines after the clerks write up your purchase in some stores, and they give us a lead on a potential item for our write-ups. Right now, there are 257 of these slips in our files, all of which have accumulated since last spring, and the problem is how ever to follow them all up before 257 more come along.

They make a pile about an inch and a half high, and for people with a statistical bent they are fascinating fare. For instance, it is interesting to notice how many titles of various kinds have been attached to our friends in the first six years since they graduated in 1951. Out of this pile of slips, there are 35 doctors! Then there are also three professors, four lieutenants, one captain, one major, three lieutenant commanders, two lieutenant colonels, six commanders, two colonels and two Mrses. We had also contemplated analyzing the pile to find out how many

moved westward and how many moved eastward and who had gone the longest distance and who had changed his address the most times (some are accounted for at least twice) and how many were overseas. But it is very late at night, and this has to be mailed to Cambridge tomorrow, so probably the analysis will never come to pass. No doubt a great loss to the social sciences.

One obstacle that we never seem to overcome in writing up these notes is the time lag between the occurrence of something important and its appearance in this column. Some of what follows in this issue was just barely too late to get in the last issue last spring, and it seems only fair to warn people that what we say may no longer be entirely correct or true. For example, there is a post card from Glenn Mackey, written in April, saying that he is back from a tour of duty in England and working on his master's degree at Oklahoma, courtesy of the Air Force. He planned to finish in June, and apparently he made it, for one of the address changes says that Glenn is now in Dayton, Ohio.

Also in April, Bill Fincke wrote to tell us about still being busy at A C Spark Plug in Milwaukee. (This is being produced the day after the last game of the World Series, and Milwaukee sounds like a fine place to be at the moment.) Bill has two boys and a girl and owns his own home. More recently, there was word from Bill Hewitt of Cleveland, who is a technical salesman for National Carbon, selling activated carbon all over the country. He has crossed paths with Bill Hazlett, who was on his way to Cuba at the time, and had also met Al Zesiger in Cleveland. All three of them have growing families; Al has three children now, and the others have two apiece.

Dave Ragone has been receiving honors right and left for his outstanding work as assistant professor (recently promoted to associate professor) of metallurgical engineering at Michigan. He was given the Detroit Engineering Society's "outstanding young engineer" award for 1957, following closely upon an "outstanding teacher of 1957" citation from Phi Lambda Upsilon, national chemistry honorary society. Ed Hucke, who is also an assistant professor in the Chemical Engineering and Metallurgy Department at Michigan, won the Gustav A. Lillquist Award of the Steel Founders of America Society.

John Lee has joined the commercial development department of National Research Corporation after six years with the research division of Du Pont's pigment department. He says he is glad to be back in Boston and is finding the new job a good opportunity to use his experience with titanium. A news release from the Electromet Metallurgical Division of Union Carbide tells of Bob MacCallum being appointed sales engineer in the Chicago region. Bob was with the American Trading Company as sales engineer in Korea before this.

George Papadopoulos married Nancy Lee Elledge in Huntsville, Ala., in August. George is at Fort Worth with Convaire, as a senior structures engineer. Howie Levinston and Eleanor Anne Clebnik were married in Brookline in

September. Howie has finished his work on a master's degree in metallurgy and is now going on toward a doctorate at Tech. Louis Marcus and Judith Elaine Zimbel were wed in August and are now living in Watertown.

Hank and Carolyn Marsh have a new daughter, Sarah, born in July. Sarah gets a minimum of spoiling at the moment, though, because her folks are busy modernizing a 100-year-old farmhouse in Granville, Ohio. This is one of the most ambitious projects we have come across recently, but Hank seems to be enjoying himself and taking the project in stride. Carolyn entertained eight assorted guests (Gerry Burns, Steve Chamberlin, Bob Knopf, Denny and Louise Spangler, Bill Miller and Bob and Rachel Gooch) one week end in August while the remodeling was at its height, without any sign of strain.

Fred and Betty Lehmann packed their new son Karl into the family convertible this summer and toured the western half of the country, from Kansas City to San Francisco and back. Karl seems none the worse for wear, and if you stop by Kansas City Fred will proudly show you innumerable excellent Kodachromes of their travels.

Before we stop it should be pointed out that there is *always* a need for news no matter how many change of address slips are in the files. Nothing pleases us more than to get a letter from some member of the Class with news of himself and others about whom he knows. Please write. — RICHARD W. WILLARD, *Secretary*, Box 105, Littleton, Mass. ROBERT S. GOOCH, *Assistant Secretary*, Freese and Nichols, 407 Danciger Building, Fort Worth 2, Texas.

1953

Last month we started a letter from Jul Greenebaum. In his letter he mentioned fellow M.I.T. men who graduated from Harvard Business School with him — Pete Noonan, Dick DeCloux, Tom Perkins, Bob McDonald, and Gene Richter. "Dick," says Jul, "will be locating in New England." Tom Perkins has a position with Hewlett-Packard, a California electronics outfit.

Going on to a few of the newspaper clippings means talking mostly about marriages. Early this year Chuck Homsy was married to Ann Elinor Forger, a graduate of Wellesley College. Chuck and Ann planned to live in Cambridge after a wedding trip to New Orleans. Stan Bloom has finished his doctoral work at Harvard and was recently married to Arlene Naomi Dore of Brookline, Mass. Arlene attended the New England Conservatory of Music. Stan is presently doing research work at Columbia University's College of Physicians and Surgeons. Sebastian Catalano and Nancy Guzzardi of Lawrence, Mass., were married in June. Sebastian has a position at the Lincoln Laboratory in Lexington. Robert Veo and Phyllis Lyons were also married in June. Bob is a member of Tekton Associates, Inc., of Natick. Everett Davis, who is a sales engineer for Dewey and Almy Chemical Co., and Priscilla Head were married in Wellesley. Priscilla is a

graduate of Lasell Junior College. One of the "combined plan" men from Amherst College, Jon Van Winkle, and Virginia Tolar Honry were married last summer in Ticonderoga, N.Y. Virginia received her bachelor's degree from Smith College and has done graduate work at the University of California. Bob Beale, one of our group associated with Project Vanguard, was married this summer to Lois Garrison in Washington, D.C. Lois at the time of the marriage was attending Teachers College at Columbia. She is a graduate of St. Luke's Hospital School of Nursing.

A note from Alcon Gallagher to the Alumni Association requesting that his subscription to the Technology Review be renewed also tells of his return from Chile, where he worked with the Chile Exploration Co. Alcon is married (my files show October 21, 1953, to Jane Watson) and is now a metallurgist and project leader with the Bureau of Mines.

Rebel Sauer sent a separate note as a supplement to his post card which tells of his marriage and Air Force tour. Next month's column will start on this note and will include other post cards received from you. — VINSON W. BRONSON, JR., *Secretary*, 47 Edgemere Road, Quincy, Mass. (New Address!)

1954

Asian flu, Russian satellites, and American hang-overs notwithstanding, here we are again. It takes more than any combination of the above to stay the intrepid hand of the gossipier.

We start off this month with the newlyweds. Kevin Woelflein married Ann Buckley in Lawrence, Mass., on September 9. Nick Blazensky and John D'Amico had supporting roles in the production. The Woelfleins are living in Philadelphia, Pa.; Kevin is hard at work at the Wharton Graduate School of Finance and Commerce, University of Pennsylvania. John Pierce and Alice Martin took the plunge in Worcester, Mass., on September 14. John is employed by the U. S. Air Force Cambridge Research Center in Bedford, Mass., and is living in Newton, Mass. We have some more information on Jerry Cohen's wedding which was mentioned last month. Jerry married Lois Nesson in Brookline, Mass., on September 15. Larry Leonard and Stan Kolodkin ushered for the affair. Jerry and his bride are honeymooning in Paris for a year or so, on a Fulbright grant. Jerry, by the way, received his doctorate in metallurgy from Tech last June. And finally, while we're on the subject of weddings, it might be mentioned that Rog Griffin's marriage to Elaine Knese, also noted last month, was the occasion of a rather wild week end in St. Louis. The groom survived the affair in fine style. Members of the wedding party included Dick Hayes, Art Jacob and your weary Secretary.

Dean Jacoby has settled down to a nine-to-five existence at the C. J. Jacoby Company in Alton, Ill. Must be deadly dull for our usually peripatetic president. However, his new schedule has given Dean an opportunity to jot down a few bits of news and send them along. He reports that Dick and Charlee Wallace

now have a second child, Hilary Margret, born last June 21. The Wallaces are living on Long Island. George and Jean Perry have left the Air Force and headed back to Tech, where George is involved in economic theories, graduate level. Bob and Tikki Anslow are just finishing their military stint at Fort McClellan; their future plans have not yet leaked this far. Dave and Pat Vogel are living in a 500-year-old house in Thaxted, Essex, England, while Dave plays soldier for Uncle Sam. Dave and Pat have their two offspring with them, as well as assorted dogs and cats. They expect to be transferred to Germany or back home in the near future. Dean reports that he met Gus Rohrs on a train between Copenhagen and Hamburg a few months ago. Gus and his bride were just ending a year in Germany, where Gus worked for an architectural firm. The Rohrs are now living in New York City. And finally, Dean announces with great pride that he has the latest word on silent Al Ward. Al and his bride of four months, Jane, have left the military life and settled in Lake Forest, Ill. Al is a teaching assistant at Northwestern University, where he is also working on a degree in the graduate business school. Jane is teaching French and English at Lake Forest High School.

Other items gleaned from hither and yon include the news that Bob Warshawer is a proud papa. Son Steven Eric was born August 29, at Ellington Air Force Base in Texas, where Bob is driving airplanes. Tom Gibbs left the Air Force in June and went to work for Avco, Research and Advanced Development Division, Lawrence, Mass. Tom is living in Haverhill, Mass. Paul Gray has retired from the Army and returned to Tech for a doctorate in electrical engineering. He is living in Belmont, Mass., and teaching part time at Tech. Len Swenson has been appointed an instructor in physics at Northeastern University. At last report, he was living in Westgate West. Al Mackenzie is working for the Du Pont Technical Laboratory in Wilmington, Del. George Bartolomei is an ensign at Barin Field in Alabama. Serge Kalinowsky is an ensign aboard the U.S.S. *Iowa*. Jim Rude is drawing pay at Minneapolis-Honeywell in Minneapolis, Minn. And John Avery is at Cavandish Laboratories in Cambridge, England.

Which ends another of our monthly chats. Let me hear the latest word from you. — EDWIN C. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Mo.

1955

Season's greetings! How odd this sounds some 70 or 80 days before Christmas as I write it! I fear that the column will be a small one this month. I have been traveling all over the western United States out of reach of the U.S. mail — not that there are no post offices out here, but my location has been pretty unpredictable. But there are a few bits of news which arrived too late for last month's notes.

More summer weddings to report. Jim Stone and Roberta Lupo of Dorchester were married June 10. They are now living in Newton, and Jim is working in

the Boston office of International Business Machines Corporation. In July, Everett Kittredge and Mildred Ingalls were married in their home town, Warner, N. H. Mildred is an alumna of Keene Teachers College, class of 1956, and she taught for a year prior to their marriage. The Kittredges are now living in Cambridge while Everett is serving with the Navy. August 17 was the wedding day of John Lindenlaub and Deborah Hart. Deborah, a native of Wolfeboro, N. H., graduated in 1956 from the Massachusetts General Hospital School of Nursing, having attended the University of Massachusetts and Boston University, also. The Lindenlaubs are now living in West Lafayette, Ind., where John is an instructor in electrical engineering at Purdue.

New arrivals have been reported by Bob and Sally Buntschuh, a son, Frank Hallett; and by Al and Dorothy Dana, a daughter, Deidre Ann. The Buntschuhs, if I remember correctly, are in Ohio, where Bob is at Wright-Patterson Air Force Base. The Danas are living in Baltimore, where Al is in his third year at the Johns Hopkins University School of Medicine. The Danas spent the summer at home in South Portland, Maine, while Al worked at the pathology department of the Maine Medical Center.

From Putnam, Conn., comes word that Norm Poulin has completed his tour of duty with the Quartermaster Corps in Germany and is returning to the United States. Meanwhile, Tom Price has gone to Turkey, where he will serve with the Navy for the next two years — traveling via Paris, Rome, and Athens. A rather mysterious form from the Navy divulges that Stefan Geiringer is now an ensign, but doesn't divulge where he is stationed.

Back in July the *New York Telegram* and *Sun* ran an article on technical writing, starring none other than Sid Reichman, who is employed in that capacity by Miles Sanderson, one of the larger technical writing outfits in New York City.

When I left on this excursion I was distressed that I couldn't bring along my address file — some 25 pounds of filing cabinet, not too handy — and look up '55ers along the way. Now I realize that it's just as well that I couldn't, for it's impossible to see *everything* in this country, much less *everybody*, too! It's a great country. I recommend it. — DELL LANIER, *Secretary-Treasurer*, 3110 Morrison Avenue, Tampa 9, Fla. Lieutenant LABAN D. SHAPIRO, *Assistant Secretary-Treasurer*, U. S. Ionosphere Station, A.P.O. 23, New York, N.Y.

1955 G

Greetings! This is the first showing '55G has made in these columns. I hope that only a few of those who have searched in vain for an appearance of news of our Class have given up, and I can give assurance to those who are still searching that there will be items about our classmates in every issue of *The Review*.

I'll begin with a report on myself, but first let me put in a request for a card or letter from each of you so that your news, too, may be shared in these columns. I'll guarantee that anyone who writes me

will get his name in print. Since leaving M.I.T., I have been living in Denver working as a geophysicist in the exploration subsidiary of the Kennecott Copper Corporation. While my principal task is research on interpretation of various geophysical procedures used in the location of ore bodies, I have had the opportunity to do some field work. This summer, for example, I spent a few weeks north of the Arctic Circle in Alaska. I'm afraid, however, that my only impression retained from the experience is just one cloud of mosquitoes and black flies. The previous summer in Maine was equally as memorable for water skiing behind a helicopter.

Lest any Kennecott stockholders are reading this with misgivings, let them be reassured that Jack Gower has been working these two years for Kennco, the Canadian exploration subsidiary of Kennecott, and has built a reputation for speaking with authority on matters in his province. Our paths have yet to cross, but there is a free flow of information across the border.

Being a firm believer that for more than 99 per cent of us marriage is the most important event in our lives, I will list next recent weddings of members of our Class. If I have left any out, be sure to let me know; and I will include them in later editions.

In New York this spring wedding bells rang for Thomas Reiner and Janet Scheff of Brooklyn. William Curtin was married to Joan Mooney of Merchantville, N. J., in May, while a June wedding was held in Brookline for Peter Koros and Aurelia Carissimo of Brookline. In August Robert Schissler and Ruth Arzoumanian were married in Jamaica Plain, the bride's home city. In January of this year, John Lincoln married Gail Callanan of Albany; and June weddings were held last year for Malcolm Douglas and Sandra Buck of Manchester-by-the-Sea, Mass., and for Roger Olen and Katherine Crane of Belmont, Mass.

At least one of our ranks has remained in academic circles. William Sellers has been appointed assistant professor in meteorology at the Institute of Atmospheric Physics, University of Arizona. Another, Phillip Bello, has achieved a rather rare distinction by winning a Bell Telephone Laboratories fellowship for the year 1957-58. Awarded to outstanding students pursuing graduate studies leading to doctorate degrees in engineering and physical sciences, the fellowship carries grants of \$2,000 to both the student and the institution of his choice. Bello will continue his studies at M.I.T.

Another appointment of note, announced almost a year ago, was that of William Menzies to the post of technical director of the Lowell Technological Institute Research Foundation. His work will consist of coordinating research projects and liaison with the Institute faculty. We have news of a transfer of David Howells, a sanitary engineer officer in the U. S. Public Health Service. He is now in Washington, D.C., in the headquarters office of the Pitts Water Supply and Water Pollution Control Program. He will be responsible for evaluating the effects of federal grants for the construc-

tion of sewage treatment plants upon the water pollution control activities in the United States.

The chemical industry must spend heavily on public relations for almost to a man my notices for job appointments are for chemists or chemical engineers. Harold Langley is with Arthur D. Little working in the field of industrial waste disposal, doing organic chemical research in the Research and Development Division of the company. Lloyd Gibson is with Monsanto Chemical Company's Plastic Division; Robert Leithiser is in Charleston, W. Va., working for Union Carbide and Carbon Corporation; Ronald Smith spent an extra year at Oxford under a National Science Foundation fellowship and is now with Du Pont in Wilmington, Del.; and finally, Hugh Deery is with Godfrey L. Cabot in Boston.

As a final note I have two service items. This past summer Walter Schlotterbeck was assigned to the U. S. Army Transportation Research and Engineering Command at Fort Eustis, Va.; and Donald Fries graduated from the Army's Antiaircraft Artillery and Guided Missile School at Fort Bliss, Texas. It must have been a stiff course, for he was trained in all theoretical and practical aspects of the NIKE guided Missile. — ROBERT BOWMAN, *Secretary*, 9728 West 57th Avenue, Arvada, Colo.

1956

Here it is the season of gifts and the woeful cost of living is higher. The cost of diamonds has risen since its mention last year. Apparently it will not pay for you to wait for that item to have an end of the year old model sale.

The public has an increasing interest in the lives and purposes of scientists. When the recent satellite was launched the public asked, "What are our scientists doing?" It was easy to mumble something about our economy being geared to produce for civilians as well as the military, thus dividing scientific efforts. Next question: "Why not educate enough scientists to sustain both efforts?" Well, what does it take to start someone along the path to the life of a par excellence scientific wizard? Everyone is aware that costs both at home and the office are rising, but it stands to reason that education costs rise faster. To maintain a group of the highest quality professors, a campus of modern classrooms and laboratories, a large living and recreational area is hardly an austerity program venture. A scientific educational facility is also less versatile and economic in space than others because it is difficult to teach chemistry lab in a materials testing lab, and so forth. Our next door neighbor in Cambridge feels that it is necessary to have \$82,000,000 quickly just to maintain standards. It is a daily wonder to me why Tech is not asking for at least that much. The next time you ponder the increased costs on your car and home, remember those that Tech must meet and add a name to your gift list.

Military engagements still have top

priority with our Class, although a noticeable number are civilians again. McIver Edwards and William Peter are at Fort McClellan. Merritt Mullen and Robert Turner are in flight training at Pensacola. Dexter Wheeler and Nathan Wise are in the Signal Corps school at Fort Monmouth. N. J. Robert Carlson and Benjamin Novins are attending Navy Officer Candidate School. Samuel Cluett is at Fort Riley, Kansas. Von Sowers is in the six months' Air Force Reserve program at Lackland Air Force Base. Edward Zoolalian is at Fort Benning, Ga. William Dickson is at Fort Belvoir. Peter Burnham is in missile work at Huntsville, Ala.

Others are continuing their formal education across the country. Paul Walter is studying chemistry at the University of Kansas. Tom Jones and Victor Bauer are studying chemistry at the University of Wisconsin. Ronald Kiaer received a master's degree from Columbia last June. William Orttung is studying physical chemistry at the University of California on a Bell Laboratory fellowship.

Benjamin Allen '54 is working at Battelle Memorial Institute in Columbus. Lawrence Hallee is working for Stone and Webster in Boston. Tom Jones has become engaged to Nancy Sippel of Midland, Mich. Victor Bauer is engaged to Sonia Witkowski of Cromwell, Conn. Richard DuVal wed Mary Thornton of Jamaica Plain in July. Richard Eastman wed Juanita Barrett of New York in July.

Special note that Phil Bryden has changed his address in Montreal. Next month will have a discussion on unionism in the life of a professional.

Remember that it does not cost extra to send a letter to Canada, so give Phil something to read on a snowy winter night. — BRUCE B. BREDEHOFT, *Secretary*, 1528 Dial Court, Springfield, Ill. M. PHILIP BRYDEN, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, Quebec, Canada.

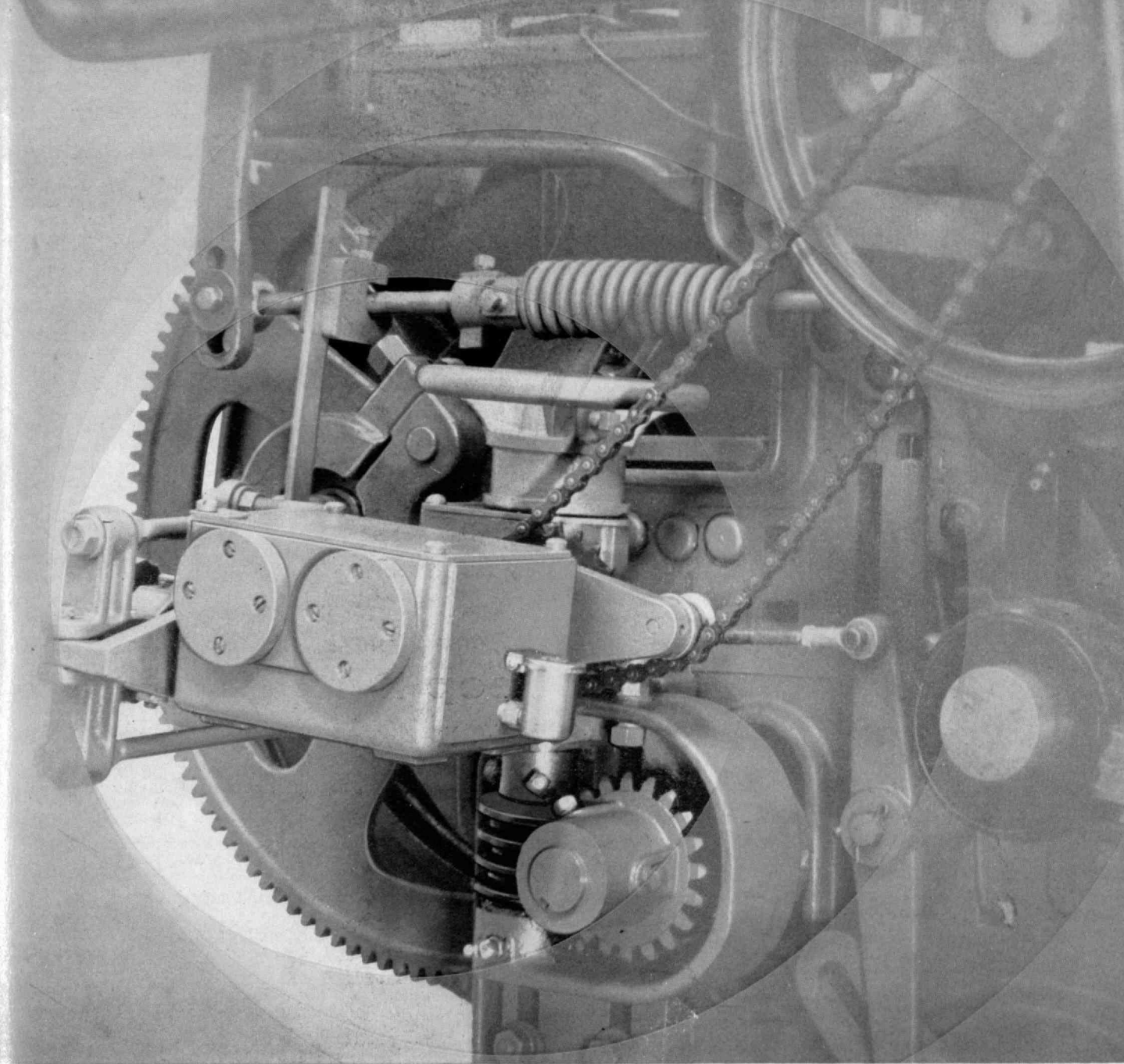
1957

Alan Kotliar spent the summer in the Autonetics Division of North American Aviation as a research engineer. Alan is currently at the Wharton School of the University of Pennsylvania as a graduate business student. Fitz Rawls served as an industrial engineer with the Chemstrand Corp. in Decatur, Ala., until last August when the Corps of Engineers caught Fitz for six months at Fort Belvoir, Va. Bob Koch worked for the A C Spark Plug Division of General Motors as a Methods Engineer until last September when Bob entered the Air Force for a three year stint. Currently, Bob is in training at M.I.T. as a weather officer. John Rinde spent the summer with Aerojet-General as a Development Engineer. John is now at Tech working in the honors course for an S.M. in mechanical engineering. Norm Lerner is with the Quartermaster Corps at Fort Lee, Va., for six months. Prior to entering service last August, Norm was with Radio Corp. of America in Camden as an electrical

engineer. Pete Samton stopped off at the Architects Collaborative before heading for the Ecole des Beaux Arts as a Fulbright Fellow in architecture. John McClary, who spent the summer with General Electric as a mechanical engineer, is now at Tech working for his S.M. in nuclear engineering. The military is really closing in, as Harold Miller tells us he is heading into the Air Force for three years after working for Radio Corp. of America this summer as a mechanical engineer; meanwhile Frank Mitchell is heading for Navy Officer Candidate School and three years service after working with General Electric this summer on their apparatus sales program. Walter Nagel received a summer fellowship as an exchange student at the College of Aeronautics at Cranfield, Bedfordshire, England. Walt preceded his summer studies with a world tour. Kyung Won Suh is at the University of Michigan working for his Sc.D. in chemical engineering. William Noz worked for the Mason-Neilan Co. as a valve design engineer. Bill is now with the Corps of Engineers at Fort Belvoir for six months. Robert Van Benschoten spent the summer with Scovill Manufacturing in the production office. Bob is currently studying for his master's in business administration at the Amos Tuck School, Dartmouth.

Marriages: Ronald Keefe was wed during the summer to Patricia Joan Grant of Malden. They honeymooned at Lake Placid and have taken up residence in Brighton. Ron is working for Epsco and is continuing his studies at Boston College Law School. The Sigma Chis gathered in Westport Point last August as Jay Bonnar took for his bride Carol Rossiter. Bob Murphy was best man while Barnard Silver and Larry Flanigan were ushers. The Bonnars visited Oyster Harbor, Cape Cod, on their wedding trip after which they returned to Waterbury, where Jay is a metallurgist for the American Brass Co. Jay enters the Air Force in December. Also honeymooning on Cape Cod last summer were Stanley Clark and his June bride, Audrey Jean Lang of Framingham. Bill Doughty served as Stan's best man. Another June wedding and a big occasion for the Phi Delta Thetas was the marriage of Jay Schmucker to Nancy Perry. Nancy is a Wellesley alumna, and St. Andrew's Church, Wellesley, was the scene of the wedding. Sandy Cobb was best man while Bill Alcorn served as one of the ushers. After a wedding trip in New Hampshire, Jay and Nancy moved to Pasadena. John Nelson wed Myra Higgins last summer in Newark, where the couple is now residing.

The M.I.T. Club of New York had a terrific beer party last October at the Rupert's Brewery. We especially enjoyed reading the questionnaire reply in which after the question "Current marital status?" one man answered "2S." Keep writing and my best wishes to each and every one of you for a merry, merry, merry Christmas and a happy New Year. — ALAN M. MAY, *Secretary*, 55 East End Avenue, New York 28, N. Y., REgent 4-2688.



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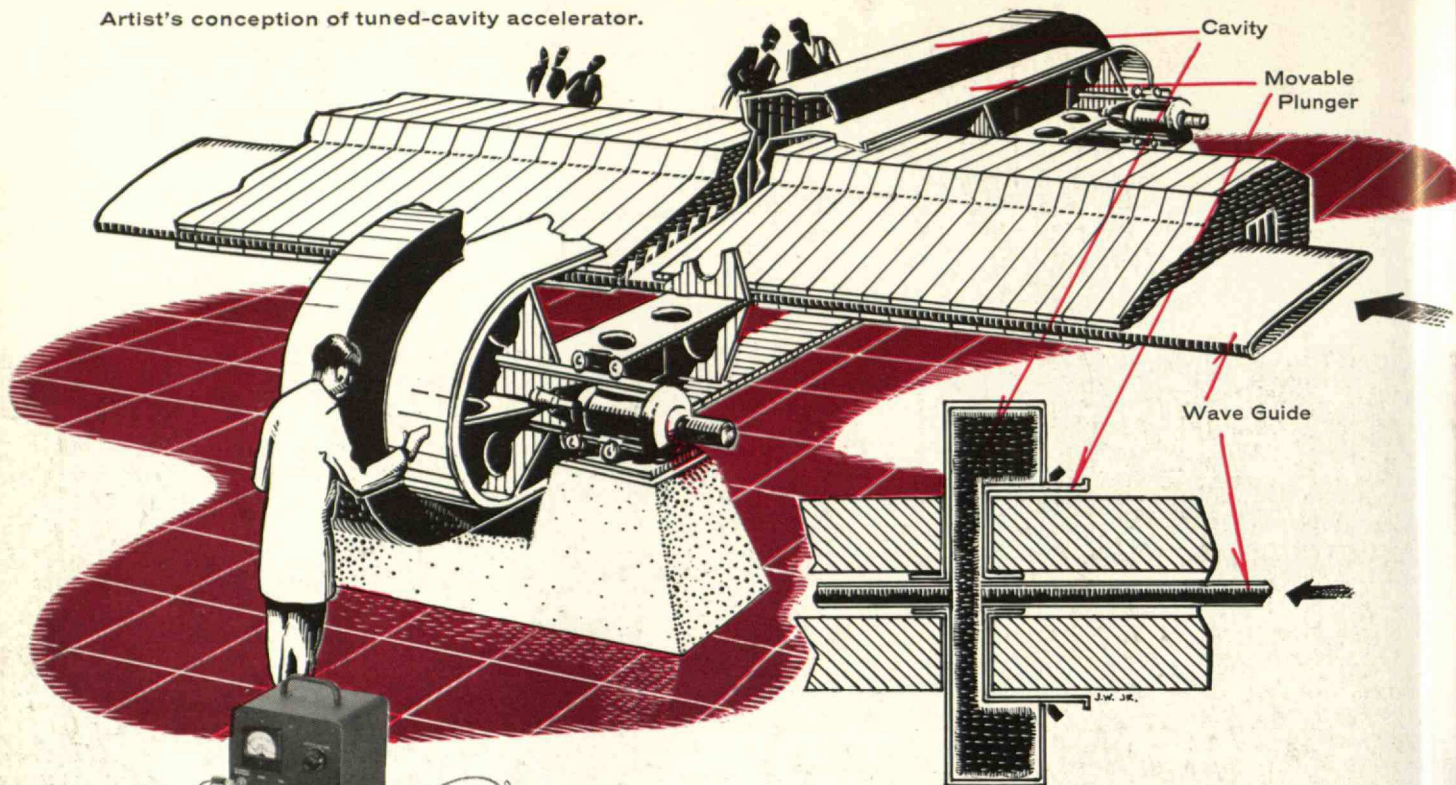


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